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UNIVERSITY OF ILLINOIS
TWELFTH SERIES: No. 3—PART 3

PRESIDENT'S OFFICE

UNIVERSITY OF PENNSYLVANIA

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FEB 1 1921

SCHOOL OF MEDICINE

(1911-1912)

Announcements for the 147th Annual Session

1912-1913



Founded 1740

PHILADELPHIA

PUBLISHED BY THE UNIVERSITY

BI-MONTHLY

MARCH, 1912

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SPECIAL NOTICE.

Copies of the University Catalogue (containing detailed information concerning all the Schools) may be obtained ONLY upon application to the Secretary of the University, Room 114, College Hall.

To any alumnus of the University, the Catalogue will be sent upon application on receipt of name, class and address.

The special announcement of any of the following divisions of the University will be sent upon application to the appropriate Dean:

THE COLLEGE, including

THE SCHOOL OF ARTS.

THE TOWNE SCIENTIFIC SCHOOL.

THE WHARTON SCHOOL OF FINANCE AND COMMERCE.

THE SUMMER SCHOOL.

THE COLLEGE COURSES FOR TEACHERS.

THE GRADUATE SCHOOL.

THE LAW SCHOOL.

THE SCHOOL OF MEDICINE.

THE SCHOOL OF DENTISTRY.

THE SCHOOL OF VETERINARY MEDICINE.

UNIVERSITY OF PENNSYLVANIA

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UNIVERSITY OF ILLINOIS

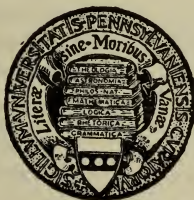
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THE UNIVERSITY.

General Information.

LOCATION.

The buildings of the University of Pennsylvania are situated in Philadelphia, on property covering an area of over fifty-nine acres. In addition to this land the University has recently acquired from the city an adjoining tract comprising fifty-five acres, more or less. The University may be reached from the various railroad stations as follows: From the West Philadelphia station of the Pennsylvania Railroad, on foot west on Woodland avenue, a walk of less than ten minutes; from the Philadelphia and Reading Terminal station by the electric subway, west to Thirty-second street, thence on foot west on Woodland avenue; or from the Baltimore and Ohio Railroad station by a walk of one square south to Walnut street, thence by car over the bridge west to Thirty-fourth street.

APPLICATIONS FOR CATALOGUES, ETC.

Applications for copies of the annual University Catalogue should be addressed to the Secretary of the University of Pennsylvania, Philadelphia, Pa.

The University also issues pamphlets relating to the College and the several Schools or to individual Departments and often containing information not found in the Catalogue. Inquirers interested in special branches of work only are advised to apply for these pamphlets, not for the Catalogue.

All letters of inquiry regarding the internal regulations and requirements in the College or each separate School of the University should be addressed to the Dean of that section (see *Administrative officers*, following), and *not* to the Secretary of the University.

ACCOMMODATIONS FOR STUDENTS.

Lodging for students to the number of more than eight hundred is provided in the present dormitory system, which comprises an extended group of contiguous houses fronting upon three open courts. Plans of the dormitories, prices, and other details may be obtained upon application to the Bursar of the University, College Hall.

Board and lodging may be obtained also in the immediate vicinity of the University. Upon application at the offices of the Bursar, College Hall, lists of approved boarding houses may be seen.

HOUSTON HALL.

Houston Hall is the home of the Houston Club, to membership in which any member of the University is eligible. The fee for active membership in the club is \$3.00 per annum.

Its purposes are to provide for the students a place where all may meet socially on common ground, and to furnish every available facility for healthy recreation and amusement in leisure hours. The equipment of the Hall includes a reading-room, with a large number of periodicals and newspapers; smoking-rooms, billiard and pool tables, tables for chess and checkers, a correspondence room, bowling alleys, shuffle boards, a bath-room, including shower and needle baths, and a swimming pool; athletic trophy rooms; a large auditorium with grand organ; rooms for the University papers and other organizations; a dark room for amateur photographers and many other rooms for general purposes.

The Christian Association, which has its headquarters in Houston Hall, is prepared to furnish prospective students, through its Secretary, full information with regard to the various undergraduate social activities, both secular and religious.

A Students' Employment Bureau is affiliated with the Christian Association; address Dana G. How, Director, Houston Hall.

UNIVERSITY OF PENNSYLVANIA.

CHRONOLOGICAL TABLE.

- 1740—"Charity School" founded.
1749—The "Academy" established, with which the Charity School was combined.
1753—Charter granted by Thomas and Richard Penn, incorporating "The Academy and Charitable School."
1755—"Confirmatory Charter" granted by Thomas and Richard Penn, incorporating "The College, Academy and Charitable School."
1765—School of Medicine founded.

From September, 1777, to June, 1778, owing to the occupation of Philadelphia by British troops, recitations and lectures were suspended.

- 1779—Withdrawal of the chartered rights and privileges of The College by the State Assembly, and incorporation of the "University of the State of Pennsylvania."
1789—Restoration of its chartered rights and privileges to The College.
1790—Law School founded (re-established in 1850).
1791—Union of the University of the State of Pennsylvania with The College, under the title of the UNIVERSITY OF PENNSYLVANIA.
1874—University Hospital established.
1875—Towne Scientific School founded.
1877—Department of Music established.
1878—School of Dentistry founded.
1881—Wharton School of Finance and Commerce founded.
1882—Graduate School founded.
1884—Veterinary School founded.
1885—Veterinary Hospital established.
1885—Department of Physical Education established.
1889—Department of Archaeology established.
1892—Laboratory of Hygiene established.
1892—Wistar Institute of Anatomy and Biology established.
1892—Saturday Courses for Teachers established.
1896—Houston Club organized.
1896—Flower Astronomical Observatory opened.
1904—Summer School (College) established.
1906—College Courses for Teachers established.
1910—Henry Phipps Institute transferred to the University.

ADMINISTRATIVE OFFICERS.

OF THE CORPORATION.

Provost—EDGAR F. SMITH, PH.D., Sc.D., LL.D.

Office in the John Harrison Laboratory of Chemistry, Thirty-fourth and Spruce Streets.

Vice-Provost—JOSIAH H. PENNIMAN, PH.D., LL.D.

Office in College Hall.

Secretary—EDWARD ROBINS.

Office, 114 College Hall. Office hours, 9.30 A. M. to 4.30 P. M.
Saturdays, 9.30 A. M. to 1 P. M.

Treasurer—WILLIAM H. HUTT, JR.

General Offices, 400 Chestnut Street.

Bursar—WILLIAM O. MILLER, A.B.

Office, 102 College Hall. Office hours, 9 A. M. to 5 P. M., daily.
The Bursar's office is open from 8.45 A. M. to 5 P. M. Saturdays,
8.45 A. M. to 1 P. M.

OF THE COLLEGE AND PROFESSIONAL FACULTIES.

Dean of the College Faculty—GEORGE EGBERT FISHER, PH.D.

Office, 103 College Hall, Woodland Avenue. Office hours, 9 A. M. to 12 M., daily.

Dean of the Graduate School Faculty—HERMAN V. AMES, PH.D.

Office, 105 College Hall, Woodland Avenue. Office hours, 9 A. M. to 12 M., daily.

Dean of the Law Faculty—WM. DRAPER LEWIS, LL.B., PH.D.

Office in the Law School Building, Thirty-fourth and Chestnut Streets. Office hours, 11.15 A. M. to 12.15 P. M., daily, except on Wednesdays and Thursdays, 12.15 to 1 P. M.

Dean of the Medical Faculty—ALLEN J. SMITH, M.D., Sc.D., LL.D.

The Dean's Office (in the Medical Laboratories, Hamilton Walk) is open from 9 A. M. to 5 P. M.; Saturdays, 9 A. M. to 1 P. M.

Dean of the Dental Faculty—EDWARD C. KIRK, D.D.S., Sc.D.

Office, Dental Hall, Thirty-fourth and Locust Streets. Office hours, 9 A. M. to 1 P. M., daily.

Dean of the Faculty of Veterinary Medicine—LOUIS A. KLEIN, V.M.D.

Office, Veterinary Building, Thirty-ninth Street and Woodland Avenue. Office hours, 1 to 2 P. M., daily.

OF THE DEPARTMENT OF PHYSICAL EDUCATION.

Director—R. TAIT MCKENZIE, A.B., M.D.

Office in the Gymnasium, Thirty-third and Spruce Streets. Office hours, 3 P. M. to 6 P. M., daily, except Saturdays.

Physician—RUFUS B. SCARLETT, M.D., 4005 Chestnut Street.

Office hours daily, from 8 to 9 A. M., 12 to 1 P. M., and from 7 to 8 P. M. Sundays until 10 A. M. Telephone connection. Other hours by appointment.

Ophthalmologist—WILLIAM CAMPBELL POSEY, A.B., M.D., 2049 Chestnut Street.

Office hours, from 8.30 A. M. to 1 P. M., daily. Telephone connection.

OF OTHER DEPARTMENTS.

Librarian of the University—MORRIS JASTROW, JR., Ph.D.

Office in the Library, Thirty-fourth Street below Walnut. Office hours, 10 A. M. to 1 P. M.

Assistant Librarian—KATHARINE STOCKTON LEIPER.

Office in the Library. Office hours, 2 P. M. to 5 P. M.

The Library is open daily during term-time, except Sundays and holidays, from 8.30 A. M. to 10 P. M. During the summer vacation, from 9 A. M. to 5 P. M.; during the session of the Summer School, from 8.30 A. M. to 5 P. M.

Librarian of the Biddle Law Library—MRS. MARGARET C. KLINGELSMITH, LL.B.

Office in the Law School Building, Thirty-fourth and Chestnut Streets. Office hours, 10 A. M. to 5 P. M., daily.

Manager of the Bureau of Publicity—GEORGE E. NITZSCHE, LL.B.

Office in Houston Hall (third floor), Spruce Street above Thirty-fourth. Office hours, 9 A. M. to 5 P. M., daily.

Superintendent of the University Hospital—MARION E. SMITH.

The Hospital is on Spruce Street above Thirty-fourth. Communications concerning the business of the Hospital and the admission of patients should be addressed to the Superintendent.

Director of the William Pepper Clinical Laboratory—HERBERT FOX, M.D.

Office in the Laboratory. Office hours, 2 P. M. to 3 P. M., daily.

The Laboratory is on Spruce Street below Thirty-sixth, adjoining the Hospital.

Director of the Wistar Institute—MILTON J. GREENMAN, PH.B., M.D.

Office in the Institute, Thirty-sixth Street and Woodland Avenue. Office hours, from 9 A. M. to 12 M., daily, except Saturdays.

Director of the John Harrison Laboratory of Chemistry—EDGAR F. SMITH, PH.D., Sc.D., LL.D.

Office in the Laboratory, Thirty-fourth and Spruce Streets.

Director of the Laboratory of Hygiene—ALEXANDER C. ABBOTT, M.D., Sc.D., D.P.H.

Office in the Laboratory, Thirty-fourth Street below Walnut.

Director of the Randal Morgan Laboratory of Physics—ARTHUR W. GOODSPEED, PH.D.

Office in the Laboratory, Thirty-fourth Street below Walnut.

Director of the Psychological Laboratory—LIGHTNER WITMER, PH.D.

Office in the Laboratory, College Hall.

Director of the Light and Heat Station—SAMUEL B. LOCKE.

Office in the Central Light and Heat Station, Thirty-fourth and Spruce Streets.

Director of the Botanic Garden—JOHN M. MACFARLANE, D.Sc.

The Botanic Garden is adjacent to Biological Hall, on Hamilton Walk, and is open daily from 7 A. M. to sunset. The greenhouses are open from 8 A. M. to 5 P. M.

Director of the Flower Astronomical Observatory—CHARLES L. DOOLITTLE, C.E., Sc.D.

The Observatory is situated on the West Chester Pike, one and three-fourths miles beyond the city limits. (Take elevated cars on Market Street to Sixty-ninth Street, then change to Ardmore or West Chester car.) The residence of the Director is adjacent to the Observatory.

Director of the Wharton School of Finance and Commerce—JAMES T. YOUNG, Ph.D.

Office, Logan Hall, Thirty-sixth Street below Woodland Avenue.
Office hours, 11 A. M. to 1 P. M., daily.

Director of the Summer School—ALBERT DUNCAN YOCUM, Ph.D.
Office hours, 1 P. M. to 3 P. M., daily, except Saturday.

Director of Phipps Institute—DR. CHARLES J. HATFIELD.
Office, Phipps Institute, 238 Pine Street.

Director of Courses in Public Health—ALEXANDER C. ABBOTT, M.D., Sc.D., D.P.H.

Office, Laboratory of Hygiene, Thirty-fourth Street below Walnut.

Director of Courses in Tropical Medicine—ALLEN J. SMITH, M.D., Sc.D., LL.D.

Dean's Office, Medical Laboratory Building, Thirty-sixth and Hamilton Walk.

Purchasing Agent—BOULTON EARNSHAW.

Office, College Hall. Office hours, 9 A. M. to 4.30 P. M.

HENRY PHIPPS INSTITUTE.

Executive Director—DR. CHARLES J. HATFIELD.

Clinical and Sociological Department, Director—DR. H. R. M. LANDIS.

Pathological Department, Director—DR. PAUL A. LEWIS.

UNIVERSITY MUSEUM.

The Museum contains the archaeological and ethnological collections of the University, and is situated on Spruce Street below Thirty-fourth, opposite Franklin Field. The collections are open to visitors daily, during the scholastic year, New Year's Day, Good Friday and Christmas Day excepted, from 10 A. M. to 5 P. M.; on Sundays, from 2 P. M. to 6 P. M.

GENERAL SUMMARIES.

OFFICERS OF INSTRUCTION.

The College.....	267
Graduate School.....	112
Law School.....	35
School of Medicine.....	170
“ “ Dentistry.....	56
“ “ Veterinary Medicine.....	30
Emeritus Professors.....	5
	675
Duplications.....	144
	819
Total.....	531

STUDENTS.

The College.....	3,400
Graduate School.....	408
Law School.....	374
School of Medicine.....	389
“ “ Dentistry.....	463
“ “ Veterinary Medicine.....	148
Evening School.....	239
	5,421
Duplications.....	221
	5,642
Total.....	5,200

GEOGRAPHICAL SUMMARY OF STUDENTS.

Alabama..... 3	Bermuda..... 1	Colombia..... 7
Argentina..... 11	Brazil..... 19	Colorado..... 4
Arkansas..... 1	California..... 19	Connecticut..... 63
Australia..... 16	Canada..... 12	Cuba..... 12
Austria..... 2	Central America... 15	Delaware..... 76
Bahamas..... 1	China..... 12	Denmark..... 2

Dist. of Columbia...32	Mexico.....15	Rhode Island.....10
Ecuador.....5	Michigan.....10	Roumania.....2
England.....5	Minnesota.....22	Russia.....1
Egypt.....4	Mississippi.....4	Scotland.....3
Florida.....12	Missouri.....16	South Africa.....1
France.....8	Montana.....5	South Carolina.....9
Georgia.....16	Nebraska.....11	South Dakota.....2
Germany.....10	New Hampshire...14	Spain.....4
Hawaii.....1	New Jersey.....505	Switzerland.....3
Holland.....3	New Mexico.....1	Tennessee.....8
Idaho.....5	New York.....287	Texas.....8
Illinois.....26	New Zealand.....7	Turkey.....3
Indiana.....35	North Carolina...22	Utah.....3
Iowa.....16	North Dakota.....6	Venezuela.....2
Ireland.....1	Ohio.....71	Vermont.....5
Italy.....6	Oklahoma.....3	Virginia.....33
Jamaica.....3	Oregon.....7	Washington.....22
Japan.....8	Panama.....2	West Virginia.....22
Kansas.....7	Pennsylvania, out-	Wisconsin.....15
Kentucky.....12	side of Phila...1,430	Wyoming.....1
Louisiana.....5	Philadelphia...2,154	Total.....5,421
Maine.....26	Peru.....2	Duplications.....221
Maryland.....65	Philippine Islands..4	Total.....5,200
Massachusetts....63	Porto Rico.....16	

SCHOOL OF MEDICINE.*

On September 27, 1912, the 147th annual session of the School of Medicine will be opened, to continue until June 18, 1913, when the annual commencement exercises for the term will be held.

This venerable institution, the oldest Medical School in the United States, was founded in 1765 by Dr. JOHN MORGAN, who filled in it the first medical professorship created in America. In his opening "Discourse upon the Institution of Medical Schools in America," delivered in the College of Philadelphia, May 30, 1765, Dr. MORGAN uttered these prophetic words: "Perhaps this medical institution, the first of its kind in America, though small in its beginning, may receive a constant increase of strength, and annually exert new vigor. It may collect a number of young persons, of more than ordinary abilities, and so improve their knowledge as to spread its reputation to distant parts. By sending these abroad duly qualified, or by exciting an emulation amongst men of parts and literature, it may give birth to other useful institutions of a similar nature, or occasional rise, by its example, to numerous societies of different kinds, calculated to spread the light of knowledge through the whole American continent, wherever inhabited."

Through Dr. MORGAN, the pupil of HUNTER in London and of CULLEN in Edinburgh, the graduates of this school take a just pride in regarding it as the lineal descendant of the best medical schools of Great Britain in the 18th century. To Dr. MORGAN was soon joined another pupil of CULLEN, Dr. WILLIAM SHIPPEN, as Professor of Anatomy and Surgery, thus forming another tie of relationship to the celebrated University of Edinburgh, methods of instruction in which were substantially adopted here. In the next year Dr. ADAM KUHN was added as Professor of Botany and Materia Medica; and on June 21, 1768, a Commencement was held, at which medical honors were bestowed, the first in point of time in America. In 1769, Dr. BENJAMIN RUSH was elected to the Professorship of Chemistry, while Dr. THOMAS BOND, one of the trustees of the College of Philadelphia, delivered lectures on Clinical Medicine in the Pennsylvania Hospital.

To the faculty thus composed of MORGAN, SHIPPEN, KUHN and RUSH have succeeded, at various times, professors whose reputations have been national, as BARTON, WISTAR, CHAPMAN, PHYSICK, DEWEES, HORNER, HARE, GIBSON, JACKSON, GEORGE B. WOOD, HODGE, JAMES B. ROGERS, CARSON, PEPPER, FRANCIS GURNEY SMITH, NEILL, HENRY H. SMITH, LEIDY, AGNEW, GOODELL, the younger PEPPER, STILLÉ, R. A. F. PENROSE, H. C. WOOD, ASHHURST, NORRIS, TYSON and DUHRING.

The number of graduates in the School of Medicine is 13,596.

*The authorities of the school reserve the right to make such modifications in connection with the announcements embodied in this catalogue as may from time to time be required or deemed wise without the formality of further notice.

PART I.

TEACHING STAFF.

SCHOOL OF MEDICINE.

FACULTY.

EDGAR F. SMITH, PH.D., Sc.D., L.H.D., LL.D., PROVOST.
JOSIAH H. PENNIMAN, PH.D., LL.D., VICE-PROVOST.

HORATIO C. WOOD, M.D., LL.D., Emeritus Professor of Materia Medica, Pharmacy and General Therapeutics.
JAMES TYSON, M.D., LL.D., Emeritus Professor of Medicine.
LOUIS A. DUHRING, M.D., Emeritus Professor of Dermatology.

PROFESSORS.

EDWARD T. REICHERT, M.D., Professor of Physiology.
BARTON COOKE HIRST, A.B., M.D., Professor of Obstetrics.
GEORGE A. PIERSOL, M.D., Sc.D., Professor of Anatomy.
JOHN MARSHALL, M.D., NAT. Sc.D., LL.D., Professor of Chemistry and Toxicology.
ALEXANDER C. ABBOTT, M.D., Sc.D., D.P.H., PEPPER Professor of Hygiene and Bacteriology, Director of Courses in Public Hygiene.
JOHN G. CLARK, M.D., Professor of Gynecology.
GEORGE E. DE SCHWEINITZ, A.M., M.D., Professor of Ophthalmology.
CHARLES H. FRAZIER, A.B., M.D., Professor of Clinical Surgery.
JOHN H. MUSSER, M.D., LL.D., Professor of Clinical Medicine.
CHARLES K. MILLS, M.D., Professor of Neurology.
WILLIAM G. SPILLER, M.D., Professor of Neuropathology.
CHARLES W. BURR, B.S., M.D., Professor of Mental Diseases.
R. TAIT MCKENZIE, A.B., M.D., Professor of Physical Education and of Physical Therapy.
RICHARD MILLS PEARCE, PH.D., M.D., Professor of Research Medicine.
ALONZO ENGELBERT TAYLOR, M.D., BENJAMIN RUSH Professor of Physiological Chemistry.

ALFRED N. RICHARDS, A.M., PH.D., Professor of Pharmacology.
 ALLEN J. SMITH, A.M., M.D., Sc.D., LL.D., Professor of Pathology
 and of Comparative Pathology; in charge of the Courses in Tropical
 Medicine; and Dean of the Faculty.

EDWARD MARTIN, A.M., M.D., JOHN RHEA BARTON Professor of
 Surgery.

GWILYM G. DAVIS, M.D., M.R.C.S. (Eng.), LL.D., Professor of
 Orthopedic Surgery.

JOHN B. DEAVER, M.D., LL.D., Professor of Practice of Surgery.

ALFRED STENGEL, M.D., Sc.D., Professor of Medicine.

MILTON B. HARTZELL, A.M., M.D., LL.D., Professor of Derma-
 tology.

HENRY K. PANCOAST, M.D., Professor of Roentgenology.

M. HOWARD FUSSELL, M.D., Professor of Applied Therapeutics.

ON THE GEORGE B. WOOD FOUNDATION.

DANIEL J. MCCARTHY, A.B., M.D., Professor of Medical Juris-
 prudence.

——— Professor of Botany.

CLINICAL PROFESSORS.

B. ALEXANDER RANDALL, M.A., M.D., PH.D., Clinical Professor
 of Otology.

J. P. CROZER GRIFFITH, PH.D., M.D., Clinical Professor of Pedi-
 atrics.

THOMAS R. NEILSON, M.D., Clinical Professor of Genito-Urinary
 Diseases.

CHARLES P. GRAYSON, M.D., Clinical Professor of Laryngology
 and Rhinology.

ASSOCIATE PROFESSORS.

WILLIAM G. SPILLER, M.D., Associate Professor of Neurology.

JAMES K. YOUNG, M.D., Associate Professor of Orthopedic Surgery.

T. TURNER THOMAS, M.D., Associate Professor of Applied
 Anatomy.

ADJUNCT PROFESSORS.

RICHARD H. HARTE, M.D., Adjunct Professor of Surgery.

JAMES P. HUTCHINSON, M.D., Adjunct Professor of Surgery.

ASSISTANT PROFESSORS.

ALFRED C. WOOD, M.D., Assistant Professor of Surgery.

RICHARD C. NORRIS, A.M., M.D., Assistant Professor of Obstetrics.

DAVID H. BERGEY, A.M., M.D., Assistant Professor of Bacteriology.

WILLIAM PEPPER, M.D., Assistant Professor of Clinical Pathology.

DAVID RIESMAN, M.D., Assistant Professor of Medicine.

JOSEPH SAILER, Ph.B., M.D., Assistant Professor of Medicine.

J. EDWIN SWEET, A.M., M.D., Assistant Professor of Surgical Research.

PAUL A. LEWIS, M.D., Assistant Professor of Pathology.

GEORGE W. NORRIS, A.B., M.D., Assistant Professor of Medicine.

EDWARD LODHOLZ, M.D., Assistant Professor of Physiology.

GEORGE FETTEROLF, M.D., Assistant Professor of Anatomy.

WILLIAM H. F. ADDISON, A.B., M.B., Assistant Professor of Histology and Embryology.

LEON A. RYAN, Ph.B., Ph.D., Assistant Professor of Chemistry and Toxicology.

DAMASO RIVAS, M.S., M.D., Ph.D., Assistant Director of Laboratory of Comparative Pathology and Tropical Medicine.

ASSOCIATES.

HENRY D. BEYEA, M.D., Associate in Gynecology.

THOMPSON S. WESTCOTT, A.B., M.D., Associate in Pediatrics.

HERMAN B. ALLYN, A.B., M.D., Associate in Medicine.

NATHANIEL GILDERSLEEVE, M.D., Associate in Bacteriology.

JOHN H. GIRVIN, M.D., Associate in Obstetrics.

WILLIAM R. NICHOLSON, Ph.B., M.D., Associate in Obstetrics.

JAMES W. McCONNELL, M.D., Associate in Neurology.

BROOKE M. ANSPACH, M.D., Associate in Gynecology.

JOHN B. CARNETT, M.D., Associate in Surgery.

GEORGE P. MÜLLER, M.D., Associate in Surgery.

JOHN H. JOPSON, M.D., Associate in Surgery.

T. TURNER THOMAS, M.D., Associate in Surgery.

JOHN C. HIRST, M.D., Associate in Obstetrics.

MAURICE OSTHEIMER, A.B., M.D., Associate in Pediatrics.
 H. R. M. LANDIS, A.B., M.D., Associate in Medicine.
 ALFRED R. ALLEN, M.D., Associate in Neurology.
 J. HAROLD AUSTIN, B.S., M.D., Associate in Research Medicine.
 A. P. FRANCINE, A.M., M.D., Associate in Medicine
 B. F. STAHL, Ph.G., B.S., M.D., Associate in Medicine.
 S. D. LUDLUM, M.D., Associate in Neurology.

LECTURERS.

ARTHUR A. STEVENS, A.M., M.D., Lecturer on Medicine.
 B. FRANKLIN STAHL, Ph.G., B.S., M.D., Lecturer on Dietetics of
 the Sick.
 JOHN T. CARPENTER, M.D., Lecturer on Ophthalmology.
 ——— ——— ——— Lecturer on the History of Medicine.

INSTRUCTORS.

CHARLES C. NORRIS, M.D., Instructor in Gynecology.
 EDWARD A. SHUMWAY, B.S., M.D., Instructor in Ophthalmology.
 E. HOLLINGSWORTH SITER, M.D., Instructor in Genito-Urinary
 Diseases.
 WALTER S. CORNELL, B.S., M.D., Instructor in Osteology.
 THOMAS B. HOLLOWAY, M.S., M.D., Instructor in Ophthalmology.
 H. MAXWELL LANGDON, M.D., Instructor in Ophthalmology.
 J. CLAXTON GITTINGS, M.D., Instructor in Pediatrics.
 WALTER G. ELMER, B.S., M.D., Instructor in Orthopedic Surgery.
 ALFRED R. ALLEN, M.D., Instructor in Neuropathology.
 HOWARD C. CARPENTER, M.D., Instructor in Pediatrics.
 CLIFFORD B. FARR, A.B., M.D., Instructor in Medicine.
 JOHN SPEESE, M.D., Instructor in Surgery.
 CHARLES A. FIFE, A.B., M.D., Instructor in Pediatrics.
 THOMAS A. COPE, M.D., Instructor in Medicine.
 FRED H. KLAER, A.B., M.D., Instructor in Medicine.
 S. D. LUDLUM, B.S., M.D., Instructor in Neuropathology.
 WILLIAM B. SMALL, A.M., M.D., Instructor in Gynecology.
 B. A. THOMAS, A.M., M.D., Instructor in Surgery.
 FLOYD E. KEENE, M.D., Instructor in Gynecology.
 RALPH BUTLER, M.D., Instructor in Otology.
 GEORGE M. PIERSOL, B.S., M.D., Instructor in Medicine.
 CARL WILLIAMS, B.S., M.D., Instructor in Ophthalmology.

THOMAS A. O'HARA, M.D., Instructor in Orthopedic Surgery.
WALTER S. HARGETT, A.B., M.D., Instructor in Laryngology.
EDWARD H. GOODMAN, M.D., Instructor in Medicine.
ROBERT L. GRAY, M.D., Instructor in Orthopedic Surgery.
ROBERT G. TORREY, M.D., Instructor in Medicine.
FRANK C. KNOWLES, M.D., Instructor in Dermatology.
WILSON G. WOOD, B.S., M.D., Instructor in Pharmacology.
FRANK A. CRAIG, M.D., Instructor in Medicine.
JOHN M. CRUCE, A.B., M.D., Instructor in Medicine.
C. M. MONTGOMERY, A.B., M.D., Instructor in Medicine.
J. T. ULLOM, A.B., M.D., Instructor in Medicine.
GEORGE G. ROSS, M.D., Instructor in Surgery.
ALBERT D. WHITING, M.D., Instructor in Surgery.
DAMON B. PFEIFFER, M.D., Instructor in Surgery.
A. B. EISENBREY, Ph.B., M.D., Instructor in Surgery.
A. I. RINGER, M.D., Instructor in Physiological Chemistry.
O. H. PLANT, M.D., Instructor in Pharmacology.
A. P. C. ASHHURST, A.B., M.D., Instructor in Surgery.
R. A. KEILTY, M.D., Acting Instructor in Pathological Histology.
J. A. KOLMER, M.D., Acting Instructor in Experimental Pathology.
K. M. LYNCH, M.D., Acting Instructor in Gross Morbid Anatomy.
WILLIAM JACKSON MERRILL, A.B., M.D., Instructor in Orthopedic Surgery.
FRANK D. DICKSON, M.D., Instructor in Orthopedic Surgery.
SAMUEL LEOPOLD, M.D., Instructor in Neurology.
N. S. YAWGER, M.D., Instructor in Neurology.
WILLIAM B. CADWALADER, M.D., Instructor in Neurology.

ASSISTANT INSTRUCTORS.

GEORGE H. CHAMBERS, M.D., Assistant Instructor in Histology.
J. REX HOBENSACK, M.D., Assistant Instructor in Anatomy.
HOWARD A. SUTTON, A.B., M.D., Assistant Instructor in Osteology.
WILLIAM E. QUICKSALL, M.D., Assistant Instructor in Anatomy.
JOHN W. BUSCH, M.D., Assistant Instructor in Surgery.
ALEXANDER A. UHLE, A.B., M.D., Assistant Instructor in Genito-Urinary Diseases.
PENN-GASKELL SKILLERN, Jr., M.D., Assistant Instructor in Anatomy.
J. H. ALLEN, A.B. M.D., Assistant Instructor in Obstetrics.

- L. F. LUBURG, M.D., Assistant Instructor in Obstetrics.
NATHANIEL GINSBURG, M.D., Assistant Instructor in Anatomy.
ELDRIDGE L. ELIASON, A.B., M.D., Assistant Instructor in Surgery.
CHARLES F. MITCHELL, M.D., Assistant Instructor in Surgery.
BENJAMIN D. PARISH, B.S., M.D., Assistant Instructor in Otology.
THOMAS C. KELLY, A.M., M.D., Assistant Instructor in Medicine.
GEORGE M. LAWS, B.S., M.D., Assistant Instructor in Surgery.
FRED. DeFOREST WEIDMAN, M.D., Assistant Instructor in Pathology.
W. G. TURNBULL, A.B., M.D., Assistant Instructor in Medicine.
D. N. HUSIK, M.D., Assistant Instructor in Laryngology.
KARL SCHÄFFLE, M.D., Assistant Instructor in Surgery and Acting Assistant Instructor in Pathology.
W. H. MACKINNEY, M.D., Assistant Instructor in Genito-Urinary Surgery.
JOHN L. LAIRD, B.S., M.D., Assistant Instructor in Genito-Urinary Surgery.
J. A. BABBITT, A.M., M.D., Assistant Instructor in Otology.
A. H. HOPKINS, B.S., M.D., Assistant Instructor in Medicine.
W. C. ROSE, B.S., PH.D., Assistant Instructor in Physiological Chemistry.
E. P. BARNARD, M.D., Assistant Instructor in Obstetrics.
N. L. KNIPE, PH.B., M.D., Assistant Instructor in Obstetrics.
O. H. P. PEPPER, B.S., M.D., Assistant Instructor in Medicine.
A. A. HOWELL, A.B., M.D., Assistant Instructor in Medicine.
E. B. KRUMBHAAR, A.B., M.D., Assistant Instructor in Medicine.
EDWIN C. TOWN, M.D., Assistant Instructor in Normal Histology.
HOWARD L. MARSH, B.S., Assistant Instructor in Chemistry.
De FOREST P. WILLARD, M.D., Assistant Instructor in Orthopedic Surgery.
ROBERT N. IVY, D.D.S., M.D., Assistant Instructor in Surgery.
HENRY WINSOR, M.D., Assistant Instructor in Surgery.
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PROSECTORS.

- ISAAC WELSH BROWN, M.D., Prosector to the Chair of Anatomy.
HENRY WINSOR, M.D., Prosector to the Associate Professor of Applied Anatomy.

ASSISTANTS.

CHARLES C. NORRIS, M.D., Assistant in Gynecological Pathology.
RALPH BUTLER, M.D., Assistant in Otological Pathology.
REUBEN A. BOGIA, M.D., Assistant in Physiology.
J. GARRETT HICKEY, D.D.S., M.D., Assistant in Physiology.
HARRY A. SCHATZ, A.B., M.D., Second Assistant in Bacteriology.
SYLVESTER J. DEEHAN, M.D., Third Assistant in Bacteriology.
SAMUEL LEOPOLD, M.D., Assistant in Neuropathology.
DAVID M. P. MAGEE, M.D., Assistant in Physiology.
FREDERICK O. WAAGE, A.B., M.D., Assistant in Physiology.
JAMES GARRETT MCCOLLIN, P.D., M.D., Assistant in Physiology.
W. B. CADWALADER, M.D., Assistant in Neuropathology.
E. M. WILLIAMS, M.D., Assistant in Neuropathology.
S. BYRON GOLDSMITH, B.S., M.D., Assistant in Anatomy.

ELIZABETH BARLETT, *Secretary.*

UNIVERSITY OF CHICAGO

ADMISSION REQUIREMENTS

Students entering the University of Chicago are required to have completed the equivalent of a high school education. The minimum age for admission is 17 years. The maximum age is 35 years. The University of Chicago does not accept students who are not citizens of the United States or who are not members of one of the Christian churches.

Students entering the University of Chicago are required to have completed the equivalent of a high school education. The minimum age for admission is 17 years. The maximum age is 35 years. The University of Chicago does not accept students who are not citizens of the United States or who are not members of one of the Christian churches.

In 1910 the same general requirements were maintained, but the minimum age for admission was lowered to 16 years.

PART II.

ADMISSION REQUIREMENTS.

Students entering the University of Chicago are required to have completed the equivalent of a high school education. The minimum age for admission is 16 years. The maximum age is 35 years. The University of Chicago does not accept students who are not citizens of the United States or who are not members of one of the Christian churches.

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ADMISSION REQUIREMENTS.

ANNOUNCEMENT.

Several years ago it was announced that beginning with 1908 certain advances would be made in the entrance requirements of the School of Medicine, such increases to be added gradually, until in 1910 the full new requirements would prevail.

Prior to 1908 the requirements for admission were equivalent to those prescribed for admission to the Freshman Class of the College. In 1908 the candidates for entrance to the First Year Class were required to show, in addition, evidence of having had special science preparation (one year of work, with laboratory exercises, in Physics, General Biology or Zoölogy and in Inorganic Chemistry, including Qualitative Analysis), and a specified amount of work in two languages other than English (one of which must have been German or French).

In 1909 the same special requirements prevailed; but one year of work in a reputable college or its equivalent was added to the general educational demands.

In 1910 two years of work in a reputable college, or the equivalent, were required in addition to the same special language and science requirements.

FOR THE ACADEMIC YEAR 1912-13.—Candidates for admission to the School of Medicine must have successfully completed work equivalent to that prescribed for the Freshman and Sophomore Classes in a college or university recognized by this University, which must include courses in Physics, Chemistry and General Biology or Zoölogy, together with appropriate laboratory work in these subjects. For detailed information consult pages 26 to 35. No conditions which conflict with the medical curriculum will be permitted in admission.

Certificates from recognized colleges covering these requirements will be accepted in lieu of an examination.

I. Admission by Diploma or Certificate.—All diplomas and certificates should be transmitted to the Dean of the Medical Faculty as early as possible in June, for decision in early summer; should this, for good reasons, be impossible, then not later than September 1st. These credentials are examined and rated by an admission committee composed of members of the faculty of the Collegiate Department of the University; and candidates will appreciate the importance of

sending in their certificates at as early a date as possible when they understand that, until these have been acted upon and the decision announced, they will not know in what subjects they will be required to take examination. Diploma or certificate must be accompanied by an official statement of the exact amount of Physics, Chemistry and either General Biology or Zoölogy studied, and the laboratory note-books of the candidate in these subjects.

(Blanks for this purpose may be obtained upon application to the Dean.)

II. Admission by Examination.—Candidates who have successfully completed the full course in a recognized high school, but who lack in whole or part the prerequisite collegiate credits (representing the work of the Freshman and Sophomore Classes as specified above) and desire on the basis of knowledge acquired outside of collegiate instruction to try to secure such prerequisite collegiate credits by examination, are permitted to apply for such examinations, for credits in the subjects in which they are deficient, to the Collegiate Department of this University. Upon successfully passing the examinations set by the collegiate departments concerned in the subjects in which the candidates are deficient, they will be admitted to regular standing in the School of Medicine. Examinations for admission to the first-year class in 1912 will be held in College Hall, beginning respectively on Thursday, June 20, at 9 A. M., and Thursday, September 19, at 9 A. M. Candidates may elect between these two dates.

Candidates will be required to register in College Hall between 9 and 11 A. M., either on Thursday, June 20, or on Thursday, September 19, and to undergo the examinations beginning on the same day.

UNIT* VALUES OF SUBJECTS REQUIRED FOR ADMISSION, SESSION 1912-1913.

For unconditional admission to the first-year class in the fall of 1912, each candidate must show evidence by acceptable credentials or by examination of having satisfactorily completed the work required for admission to the Collegiate Department of this University and required of the Freshman and Sophomore classes in the College. Expressed in unit values, this contemplates 53 units; of which it may be presumed 23 represent the entrance requirements of the College, and 30 the work of the first two years of the collegiate course. These 53 units are made up from the following four groups, Groups I and II being the entrance requirements of the College of this University, Group III representing special collegiate scientific preparation required for Medical study, and Group IV including a number of subjects suggested from the Freshman and Sophomore courses, from which may be offered the necessary additional units.

I. Each candidate must offer English A, B, two branches of History and Mathematics A, C, amounting in all to 10 units.

English:

A—Reading and Practice.....	2 units
B—Study and Practice.....	2 “

(No student will be admitted to the School of Medicine unless possessed of such ability to understand, read, write and speak the English language as to enable him to carry on the work of the course.)

History: Any two of the following:

A—Ancient History.....	1 unit
B—Medieval and Modern History.....	1 “
C—English History.....	1 “
D—American History and Civil Government.....	1 “

Mathematics:

A—Elementary Algebra.....	2 units
C—Plane Geometry.....	2 “

II. Each candidate must offer two of the four languages (aggregating from 6 to 10 units) contained in this group (one of these must be either German or French).

* A unit of college grade is the equivalent of one hour of lecture or recitation each week for the full academic year, or two hours of laboratory work each week for the same period. Units of preparatory work usually vary between three and five hours each week, as compared with one hour of collegiate study for a single unit.

EPITOMIZED STATEMENT OF ENTRANCE REQUIREMENTS.

(For details the fuller descriptions should be consulted.)

This table is based upon the entrance requirements and the work of the Freshman and Sophomore Years of The College of this University. Subjects printed in italics are essential. Course numbers refer to courses in the College of the University of Pennsylvania.

I. A. COLLEGE ENTRANCE REQUIREMENTS.

(16-23 units.)

<i>English</i>	4	units.
<i>History</i>	2	"
<i>Mathematics:</i>		
<i>Algebra</i>	2	} 4 "
<i>Plane Geometry</i>	2	
* <i>Latin</i>	7	"
* <i>Greek</i>	6	"
* <i>Elementary German</i>	3	"
or		
* <i>Elementary French</i>	3	"

II. FRESHMAN AND SOPHOMORE COLLEGE WORK.†

(30 units.)

B. SPECIAL SCIENTIFIC REQUIREMENTS.

<i>Mathematics (Elementary Plane Trigonometry)</i> ...	1	unit.
* <i>Intermediate German (Course 322)</i>	3	units
or		
* <i>Intermediate French (Course 282)</i>	3	"
† <i>Biology (including Laboratory work) (One half of</i>		
<i>Course 681 and one half of Course 71)</i>	3	"
or		
† <i>Zoology (including Laboratory work) (Course 681)</i> ..	3	"
† <i>Physics (including Laboratory work) (Course</i>		
<i>601)</i>	4	"
† <i>General and Inorganic Chemistry and Qualitative</i>		
<i>Analysis (including Laboratory work) (Courses</i>		
<i>91 and 92)</i>	5	"

C. ELECTIVE SUBJECTS FOR COMPLETION OF REQUIRED TOTAL OF UNITS.

<i>English (advanced)</i>	
<i>Mathematics</i> "	
<i>Greek</i> "	
<i>Latin</i> "	
<i>French</i> "	
or	
<i>German</i> "	
(Other foreign modern scientific languages	
<i>may be credited as in the Arts and Science</i>	
<i>division of the College of this University.)</i>	
<i>Quantitative Chemical Analysis</i>	
<i>Organic Chemistry</i>	

* Two languages other than English must be offered; one of these two must be French or German; the two may be French and German or either Latin or Greek with French or German. In case of applicants whose native language is other than English, this will be accepted on the same basis as is English for American applicants. English will in such cases be permitted as a substitute for French or German as a modern scientific language. However, no student will be admitted who is unable to understand, read, write and speak English sufficiently well to enable him to carry on the work of the class.

† Laboratory note-books or a complete and official statement of the experiments or exercises performed by the candidates must accompany all certificates.

‡ These subjects must be understood as of a grade at least equal to that prescribed in the Freshman and Sophomore Years in reputable colleges.

EP

This table is based upon the entrance requirements of the University. Subjects printed in italics are essential. Course numbers are in parentheses.

I.

A. COLLEGE ENTRANCE REQUIREMENTS.

(16-23 units.)

		Subjects for Completion of
		Total of Units.
<i>English</i>	4	.....
<i>History</i>	2	.....
<i>Mathematics:</i>		.....
<i>Algebra</i>	2	.....
<i>Plane Geometry</i>	2	.....
* <i>Latin</i>	7	.....
* <i>Greek</i>	6	.....
* <i>Elementary German</i>	3	.....
or		.....
* <i>Elementary French</i>	3	.....

* Two languages, French and German or either English, this will be admitted as a substitute for the other to understand, read and write.

† Laboratory experiments must accompany all studies.

‡ These subjects must be completed in reputable college or university.

Latin:

A—Grammar and Elementary Prose Composition.....	1 unit
B—Easy Prose.....	1 “
C—Advanced Prose.....	2 units
D—Poetry.....	2 “
L—Prose Composition.....	1 unit

Greek:

B—Xenophon, Anabasis, Bks. I–IV.....	2 units
C—Homer, Iliad, Bks. I–III.....	2 “
F—Prose Composition.....	1 unit
G—Sight Translation of Prose.....	1 “

French:

A—Elementary French.....	3 units
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German:

A—Elementary German.....	3 units
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III.—The following special subjects (representing a minimum total of 11 units) must also be offered for admission to the School of Medicine. They must include laboratory work; and evidence of such exercise in the shape of the candidate's laboratory note-books must be presented, accompanied by the usual teachers' certificates as to the trustworthiness of the record.

General and Inorganic Chemistry—including Qualitative

Analysis (Courses 91 and 92 of the College Department)... 5 units

Physics (Course 601A and B of the College Department)..... 4 “

General Biology or Zoölogy (One half of Course 681 and one half of Course 71; or Course 681 in the College)..... 3 “

IV.—In addition to the foregoing the candidate must offer at least a sufficient number of units of work done in a college recognized by this University (or present evidence of the equivalent of such work), to insure a minimum total of 53 units. In this additional requirement a reasonable amount of latitude in the distribution of units will be allowed, following the unit values of similar studies in the Course in Arts and Sciences of this University. As examples of the various courses from which the candidate may attain the necessary additional units the following courses of the College, Arts and Science, of this University may be presented with their unit values:

English:

Courses 231, 232, 233, 234, 235, 236..... 6 units

History:

Courses 362, 363, 364, 365..... 8 “

Mathematics:

Courses 461, 462..... 2 units

Greek:

Course 331..... 3 “

Latin:

Courses 431A, 431B, 431C, 432A, 432B, 432C..... 9 “

French:

Course 282..... 3 “

German:

Course 322..... 3 “

Botany:

Courses 71, 72, 77..... 10 “

Chemistry:

Course 94 or 95, and 96..... 6-7 “

Zoölogy:

Courses 691, 693, 696..... 8 “

(Credit may be given for knowledge of foreign languages not included in the above list.)

DESCRIPTION OF SUBJECTS REQUIRED FOR ADMISSION.

I.

ENGLISH.

No candidate will be accepted in English whose work is notably defective in spelling, punctuation, idiom or division into paragraphs.

A. (1) GRAMMAR and ANALYSIS, as in any advanced course in English Grammar and Analysis. The student's attainment in this subject will be rated as 50 per cent of the test in English A.

(2) The writing of a short theme on a subject to be selected from a list that will be submitted to the student at the time of examination. This theme will be rated according to its correctness in spelling, punctuation, grammar, paragraph-structure and expression.

(NOTE.—The University of Pennsylvania, recognizing the difficulty of framing a satisfactory examination paper from the list of reading in English A as authorized by the National Conference on Uniform Entrance Requirements in English, has substituted (2), as above, for the examination in the books for general reading.)

B. A *special* knowledge of the subject-matter, form and structure of the following works:

For 1912: Shakespeare's *Macbeth*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*, or Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

For 1913-1915: Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, and *Comus*; either Burke's *Speech on Conciliation with America*, or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; either Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

Candidates who pass the examinations of the C. E. E. B. (College Entrance Examination Board) in English **A** and **B** will be given credit for English **A** and **B**.

HISTORY.

Each candidate is examined in *two* (2) of the four subjects, **A**, **B**, **C**, **D**.

Outline maps will be furnished for the questions in historical geography which will form a part of each paper.

Extra credit will be given for student note-books giving abstracts of collateral reading, notes of lectures, or digests of the text-book used. Such books should be certified by the candidate's teacher.

A. Ancient history, with special reference to Greek and Roman history, and including also a short introductory study of the more ancient nations and the chief events of the early Middle Ages, down to the death of Charlemagne (814).

B. Medieval and modern European history, from the death of Charlemagne to the present time.

C. English history, with due reference to social and political development.

D. American history. The questions will be upon the four following topics:

1. Historical geography. Questions are to be answered by drawing on an outline map certain geographical boundaries.
2. The Colonial period.
3. The Revolutionary period.
4. The Constitutional period. Under this topic will be a few questions on civil government.

Candidates who pass the examinations of the C. E. E. B. in History **A, B, C, D**, will be given credit for the corresponding subjects above, viz: History **A, B, C, D**, respectively.

MATHEMATICS.

A. ELEMENTARY ALGEBRA.

(i) *Algebra to Quadratics*.—The four fundamental operations for rational algebraic expression. Factoring, determination of highest common factor and lowest common multiple by factoring. Fractions, including complex fractions, ratio and proportion. Linear equations, both numerical and literal, containing one or more unknown quantities. Problems depending on linear equations. Radicals, including the extraction of the square root of polynomials and of numbers. Exponents, including the fractional and negative.

(ii) *Quadratics and Beyond*.—Quadratic equations, both numerical and literal. Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations. Problems depending on quadratic equations. The binomial theorem for positive integral exponents. The formulas for the n th term and the sum of the terms of arithmetical and geometric progressions, with applications.

C. PLANE GEOMETRY.—The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle, and the measurement of angles; similar polygons; areas, regular polygons, and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

F. PLANE TRIGONOMETRY.—Definitions and relations of the six trigonometric functions as ratios; circular measurement of angles. Proofs of principal formulas; in particular for the sine, cosine, and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expressions for the sum of the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas. Solution of trigonometric equations of a simple character. Theory and use of logarithms (without the introduction of work involving infinite series). The solution of right and oblique triangles, and practical applications.

Candidates who pass the examinations of the C. E. E. B. in Mathematics **A (i)**, **A (ii)**, **C** and **F** will be given corresponding credit.

II.

ANCIENT AND FOREIGN LANGUAGES.

GREEK.

NOTE.—Questions on inflection, derivation, composition of words and on syntax will be asked under B and C.

B. XENOPHON: The first four books of the *Anabasis*.

C. HOMER: The first three books of the *Iliad* (omitting II, 484–end).

F. PROSE COMPOSITION: Continuous prose based upon Xenophon and other Attic prose of similar difficulty.

G. SIGHT TRANSLATION OF PROSE of no greater difficulty than Xenophon's *Anabasis*.

Candidates who pass the examinations of the C. E. E. B. in Greek B, C, F, G will be given corresponding credit.

LATIN.

NOTE.—Questions will be asked under B, C and D, on the inflection, derivation, and composition of words, on syntax, and on geography, history, and mythology.

In each paper candidates must deal satisfactorily with all parts of the examination, or no credit will be given for the paper.

A. GRAMMAR AND ELEMENTARY PROSE COMPOSITION: The inflections, the simpler rules for the composition and derivation of words; syntax of cases and the verb structure of sentences in general. Translation of Latin into simple sentences.

B. EASY PROSE: The amount to be read by the student shall be not less than Cæsar, *Gallic War*, I–IV; the reading shall be done in Cæsar, *Gallic War* and *Civil War*, and Nepos, *Lives*. The examination will include passages at sight.

C. ADVANCED PROSE: The amount to be read by the student shall be not less than Cicero, *Orations against Catiline, for the Manilian Law, and for Archias*; the reading shall be done in Cicero, *Orations, Letters, and De Senectute*, and Sallust, *Catiline and Jugurthine War*. The examination will be upon the following prescribed reading: Cicero, *Orations for the Manilian Law and for Archias*, and will include also passages at sight.

D. POETRY: The amount to be read by the student shall be not less than Vergil, *Aeneid*, I–VI; the reading shall be done in Vergil, *Bucolics, Georgics, and Aeneid*, and Ovid, *Metamorphoses, Fasti and Tristia*. The examination will be upon the following prescribed reading: Vergil, *Aeneid*, I, II and either IV or VI at the option of

the candidate, with the scansion of the dactylic hexameter, and will include also passages at sight.

L. PROSE COMPOSITION: The translation into Latin of continuous English prose based upon passages of moderate difficulty in Cæsar or Cicero.

Candidates who pass the examinations of the C. E. E. B. will be given corresponding credit, as follows:

C. E. E. B.

A—Ai, ii, or NR1, 2.

B—B, M, or NR3.

C—C, P, or NR4.

D—D, Q, or NR5.

L—NR6.

FRENCH.

A. ELEMENTARY FRENCH.—Preparation for this examination should comprise (1) careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation.

During the second year the work should comprise (1) the reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches; (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

Suitable texts for the second year are: About's *Le roi des montagnes*,

Bruno's *Le tour de la France*, Daudet's easier short tales, La Bédollière's *Le Mère Michel et son chat*, Erckmann-Chatrian's stories, Foa's *Contes biographiques* and *Le petit Robinson de Paris*; Foncin's *Le pays de France*, Labiche and Martin's *La poudre aux yeux* and *Le voyage de M. Perrichon*, Legouvé and Labiche's *La cigale chez les fourmis*, Malot's *Sans famille*, Mairét's *La tâche du petit Pierre*, Mérimée's *Colomba*, extracts from Michelet, Sarcey's *Le siège de Paris*, Verne's stories.

Candidates who pass the examinations of the C. E. E. B. in French **A** will be given corresponding credit.

GERMAN.

A. ELEMENTARY GERMAN.—The preparation for this examination should comprise: (1) Careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise: (1) The reading of from 150 to 200 pages of literature in the form of easy stories and plays; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

The following reading recommended in the report of the Committee of Twelve will furnish matter from which selections may be made by the teacher: Andersen's *Märchen* and *Bilderbuch ohne Bilder*; Arnold's *Fritz auf Ferien*; Baumbach's *Die Nonna und der Schwieger-ohn*; Gerstäcker's *Germelshausen*; Heyse's *L'Arrabbiata*, *Das Mädchen*

von Treppi, and *Anfang und Ende*; Hillern's *Höher als die Kirche*; Jensen's *Die braune Erica*; Leander's *Träumereien*, and *Kleine Geschichten*; Seidel's *Märchen*; Stökl's *Unter dem Christbaum*; Storm's *Immensee* and *Geschichten aus der Tonne*; Zschokke's *Der zerbrochene Krug*; Hauff's *Das kalte Herz*. Among shorter plays the best available are perhaps Benedix's *Der Prozess*, *Der Weiberfeind*, and *Günstige Vorzeichen*; Elz's *Er ist nicht eifersüchtig*; Wichert's *An der Majorsecke*; Wilhelmi's *Einer muss heiraten*.

Candidates who pass the examinations of the C. E. E. B. in German A will be given corresponding credit.

III.

REPRESENTING SPECIAL SCIENTIFIC REQUIREMENTS FOR MEDICAL STUDIES.

Laboratory note-books, properly certified, must be submitted with diploma or certificate.

CHEMISTRY.

Credits for five collegiate units in General and Analytical Chemistry are prerequisites to the School of Medicine. These requirements are in general covered by the regular Freshman courses in chemistry in colleges recognized by this University. They are covered by courses 91 and 92 of the Department of Chemistry of this University. Credits in chemistry (whether by diploma, certificate or on examination) presented by candidates must be equivalent to said courses 91 and 92 of the Department of Chemistry of this University; and the valuations of credits in chemistry offered for admission to the School of Medicine will be determined by the Head of said Department of Chemistry.

PHYSICS.

Credits for four units of collegiate physics are prerequisite for admission to the School of Medicine. These requirements are in general covered by the regular lecture and laboratory courses in physics in colleges recognized by this University. Course 601, A and B, of the Department of Physics of this University fulfills the requirements.

GENERAL BIOLOGY OR GENERAL ZOÖLOGY.

Credits for three units of collegiate Biology or Zoölogy are prerequisite for admission to the School of Medicine. Credits in these subjects must be equivalent to Course 681 of the Department of

Zoölogy or to half of Course 681 of the Department of Zoölogy together with half of Course 71 of the Department of Botany of this University; and the valuation of credits in Zoölogy and Biology will be determined by the Departments of Zoölogy and Botany.

IV.

REPRESENTING A MINIMUM OF WORK IN A FRESHMAN AND SOPHOMORE COLLEGIATE COURSE IN ARTS AND SCIENCE.

(Sufficient units to make up a total of 53 with those acquired from preceding groups.)

For description of appropriate branches representing this portion of the candidate's preparation, reference may be made to the College Fasciculus of the Annual Catalogue of the University.

The various studies are not here detailed; since considerable latitude of election exists in many colleges and more or less variation in prescribed courses also occurs in different college curricula. Such differences occasioned by election or by regular requirements of institutions will be adjudged by comparison with the work of the Freshman and Sophomore classes of the College of the University of Pennsylvania.

ADVANCED STANDING IN SUBJECTS.

Any graduate in Arts or Science of a college recognized by this University who has completed any of the studies of the first year of the Medical Course, viz.: Physiological Chemistry, Bacteriology or Anatomy (excepting the Central Nervous System and the Organs of Special Sense), and who has passed satisfactorily the examination given by the professor of the respective branch in this medical school, may be excused from that portion of the study given in the first year of the course, provided that he utilizes the time scheduled for that study in advanced work in Chemistry, Bacteriology or Anatomy, or other subject, according to his preference and capabilities; or in anticipating work of the second year in so far as the roster may permit.

ADMISSION TO ADVANCED STANDING.

Candidates for admission to advanced standing will be required to meet the admission requirements which were in effect at the time the class to which they are entitled to enter was admitted, in addition to the examination in the subjects italicized below.

Examinations for admission to advanced standing for the session 1912-13 may be taken in the new Medical Laboratories, beginning Monday, June 3, 1912, at 9 A. M., or Monday, September 23, 1912, at 2 P. M. All examinations must be passed before the beginning of the regular session, September 27, 1912, at 8 P. M.*

Candidates who have attended one course in a recognized regular medical school in which the required annual session is not less than eight months in length, are admitted to the SECOND-YEAR Class upon passing a satisfactory examination in *Physiological Chemistry*, *Anatomy* and in *Bacteriology*.

Candidates who have attended two courses in a recognized regular medical school in which the required annual session is not less than eight months in length, are admitted to the THIRD-YEAR Class upon passing a satisfactory examination in *Physiological Chemistry*, *Pathology*, *Physical Diagnosis*, *Bacteriology*, the entire subjects of *Anatomy* and *Physiology*, *Applied Anatomy* and *Pharmacology*.

Candidates who have attended three courses in a recognized regular medical school in which the required annual session is not less than eight months in length, are admitted to the FOURTH-YEAR Class upon passing a satisfactory examination in *Physiological Chemistry*, *Pharmacology*, *Bacteriology*, *Physical Diagnosis*, *Anatomy*, *Physiology*, *Applied Anatomy*, *Pathology*, *Therapeutics*, *Medicine*, *Surgery*, *Obstetrics*, and *Ophthalmology*.

Graduates of recognized regular medical schools, in which the required annual session is not less than eight months in length, and in which four years' attendance upon instruction is required to obtain the degree in Medicine, are admitted to the FOURTH-YEAR Class with the understanding that they pass examinations in *Obstetrics*, *Therapeutics*, *Pathology* and *Gross Pathology*, either at the beginning or at the end of the fourth year, in addition to the regular examinations of that year.

* Students from other colleges who have not had practical work in the subjects here taught in laboratory courses equivalent to that done in this institution will be required to make up such deficiency by taking special courses in such branches.

THE INSTRUCTIONAL PROCESS.

CHAPTER III.

PART III.

METHODS AND SUBJECTS OF INSTRUCTION.

UNDERGRADUATE.

UNDERGRADUATE INSTRUCTION.

The course of instruction extends over a period of four years, with one session in each year, beginning on the last Friday of September and ending on the third Wednesday in June.

The course may be said to be divided into two periods of two years each: the first period devoted to the fundamental medical sciences, Physiological Chemistry, Toxicology, Anatomy, Physiology, Bacteriology, Pharmacology and Pathology, including also Physical Education; the second period to the clinical subjects, Medicine, Surgery, Obstetrics and the specialties.

FIRST PERIOD.

The subjects of the first two years have been arranged according to a modification of the concentration system. By this system the student is enabled to concentrate his energy upon one or two subjects, and must master these before he is allowed to continue the course. Thus the first year is devoted chiefly to anatomy, including embryology, normal histology and osteology, and to physiological chemistry, and bacteriology.

The subjects of the second year follow in logical sequence those of the year preceding. The time of the second year is thus given over largely to physiology, pathology, pharmacology and applied anatomy. In addition to these the work of the second year includes courses in physical diagnosis, toxicology and bandaging.

Instruction upon the subjects of the first two years is almost entirely practical, so that the greater part of the student's time is spent in the laboratories. In the Laboratories of Anatomy, in those of Pathology, Physiology and Pharmacology, which were opened in June, 1904, and in the bacteriological section of the Laboratory of Hygiene, the students are afforded unsurpassed facilities for practical work in these fundamental-subjects.

SECOND PERIOD.

With the beginning of the third year the student enters upon the second period, which covers the third and fourth years, and is devoted almost exclusively to instruction in the so-called clinical subjects—Medicine, Surgery, Obstetrics and the specialties. There is no sharp dividing line between the work of the third and fourth years, so that the courses in the clinical subjects may be said to cover a period of two years.

From a glance at the tabular representation of the hours of instruction for the third and fourth years (later pages), it will be seen that arrangements have been made to keep the student fully occupied

throughout each day. No especial opportunities are offered him to engage in special lines of work before he graduates. In point of fact, any desire to specialize before graduation is rather discouraged. It has always been the object and aim of this institution to prepare its students for the practice of general medicine, not to graduate them as "specialists." *Its policy has been to offer the student a well-graded, well-proportioned and comprehensive course*, so that upon his graduation he stands prepared to *practice* medicine. Should he decide to take up a specialty or to engage in teaching or investigation after graduation, he will be the better prepared by his broad education, and still better prepared if he has had several years of clinical experience.

The methods of instruction are varied, but mostly practical. The latter include ward visits, ward classes, clinical conferences and practical observation in the wards and out-patient department of the University Hospital. Systematic lectures, general clinics and recitations have been found indispensable, but play a less conspicuous part in the course.

The facilities for instruction are abundant. It is possible to offer to each student opportunities to come into personal contact under proper supervision with a large and varied series of cases. The University Hospital, with its capacity of 391 beds, is operated exclusively for the benefit of the School of Medicine. Adjoining the University campus is the Philadelphia General Hospital, with a capacity of 1600 beds, where the wards are open to both teachers and students throughout the year; this not including the adjoining Philadelphia Insane Hospital, with over 2000 beds, also available for teaching purposes. Material advantage is had, too, by the students of the Fourth-year Class in attendance in sections upon the work of the Phipps Institute for the Study, Prevention and Cure of Tuberculosis, recently acquired by the University through the generosity of Mr. Henry Phipps.

In addition, extramural teaching is conducted in the Children's, the German and Pennsylvania Hospitals by members of the teaching staff. A voluntary course upon the contagious diseases, conducted at the Municipal Hospital, is offered to the members of the Graduating Class.

ANATOMY.

GEORGE A. PIERSOL, M.D.....*Professor of Anatomy.*

T. TURNER THOMAS, M.D.....*Associate Professor of Applied Anatomy.*

GEORGE FETTEROLF, M.D.....	<i>Assistant Professor of Anatomy.</i>
WILLIAM H. F. ADDISON, M.B.....	<i>Assistant Professor of Histology and Embryology.</i>
WALTER S. CORNELL, M.D.....	<i>Instructor in Osteology.</i>
J. REX HOBENSACK, M.D.....	} <i>Assistant Instructors in Anatomy.</i>
WM. E. QUICKSALL, M.D.....	
PENN-GASKELL SKILLERN, M.D....	
NATHANIEL GINSBURG, M.D.....	} <i>Assistant Instructors in Histology.</i>
GEORGE H. CHAMBERS, M.D.....	
EDWARD C. TOWN, M.D.....	
HOWARD A. SUTTON, M.D.....	<i>Assistant Instructor in Osteology.</i>
ISAAC WELSH BROWN, M.D.....	<i>Prosecutor to Professor of Anatomy.</i>
HENRY WINSOR, M.D.....	<i>Prosecutor to Associate Professor of Applied Anatomy.</i>
S. BYRON GOLDSMITH, M.D.....	<i>Volunteer Assistant in Anatomy.</i>
ERWIN F. FABER.....	<i>Instructor in Drawing.</i>

Of the following courses in Anatomy, I to IX, inclusive, are required of candidates for the degree of Doctor of Medicine. All are completed during the first year, except Courses III and IX, which are completed during the second year. Courses X to XIV are not required, but may be taken by students who have had satisfactory preparatory training.

I. SYSTEMATIC ANATOMY OF THE ORGANS. *Professor Piersol.*—October 2 to January 24; three hours weekly.

II. ANATOMY OF THE CENTRAL NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. *Professor Piersol.*—February 5 to May 29; three hours weekly.

III. COURSE IN APPLIED ANATOMY. *Associate Professor Thomas.*—February 8 to May 31; three hours weekly.

IV. LABORATORY COURSE IN GENERAL HISTOLOGY. *Dr. Addison and assistants.*—October 2 to December 22; each section two mornings weekly.

V. LABORATORY COURSE IN THE HISTOLOGY OF ORGANS. *Dr. Addison and assistants.*—January 3 to March 30; each section two mornings weekly.

VI. LABORATORY COURSE IN EMBRYOLOGY. *Dr. Addison and assistants.*—April 1 to May 21; each section two mornings weekly.

VIII. OSTEOLOGY. *Dr. Cornell.*—October 2 to January 22; one hour weekly.

VII. LABORATORY COURSE IN OSTEOLOGY. *Drs. Cornell and Sutton.*—October 2 to November 25; each section ten hours for seven weeks.

IX. PRACTICAL STUDY OF THE BODY BY DISSECTION. *Dr. Fetterolf and assistants.*—October 2 to May 31; each section two hours daily for periods of seven weeks.

X. SPECIAL COURSE ON ANATOMY OF SENSE ORGANS. *Professor Piersol.*—February 1 to May 15; Wednesday mornings.

XI. SPECIAL COURSE IN ANATOMY OF FRACTURES AND LUXATIONS.

XII. ADVANCED LABORATORY COURSE IN VERTEBRATE EMBRYOLOGY. *Professor Piersol and Dr. Addison.*—October 15 to May 1; mornings.

XIII. LABORATORY COURSE IN MICROSCOPICAL TECHNIQUE. *Professor Piersol and Dr. Addison.*—April 1 to May 15; three mornings weekly.

XIV. ADVANCED WORK AND ORIGINAL INVESTIGATION. *Professor Piersol.*—October 15 to May 15.

Courses I and II, three lectures a week throughout the session, present the principles, as well as details, of human anatomy, including structure and development. Especial pains are taken to impress the broader morphological significance of the details of human anatomy. These courses are exceptionally well illustrated by means of charts, lantern, models, museum preparations and fresh dissections, the unusual resources of the Wistar Institute of Anatomy and Biology being additionally available, not only for class instruction, but also for individual study.

Courses IV and V occupy two mornings each week, until April 1, during which time the student is required to mount, study and draw preparations of all of the important tissues and organs of the human body, as well as to learn the methods employed in their preparation.

Course VI is devoted to the mounting and study of series of chick and mammalian embryos. The laboratory is equipped with excellent microscopes of recent model, and supplied with the most approved apparatus for histological and embryological work.

Course VIII, in the osteological laboratory, is conducted for a period of forty-two days, two hours daily. The exercises include the detailed study of the skeleton, each student being provided with bones which he is required to draw, noting the important features and principal muscular attachments. The joints are also studied on finished dissections. Bones are lent to students upon conditions similar to those governing the issue of books from a library.

Course IX forms a most important part of the first and second year work, every student being required to carefully dissect and pass practical examination upon the cadaver. The class works at least two hours daily under the close supervision of the Instructor in

Anatomy and his assistants. Excellent and abundant dissecting material is assured by the improved methods of preservation and the facilities for cold storage. Opportunity for additional work is afforded to students who desire to devote more time to practical anatomy.

Course III is a continuation of the study of anatomy, but from the standpoint of its application, and not as an abstract science. The course embraces surface anatomy, the outlines of the organs, the position of the joints, significance of bony points, muscular swells, the position and means of recognizing the various nerves and arteries; the influence of the muscles in fractures; the construction of joints in reference to luxations; a knowledge of the parts incised in amputations; how the parts influence and direct the progress of abscesses; a knowledge of the lymphatics in reference to pyogenic and carcinomatous infections; a knowledge of the position and relation of the abdominal organs necessary for diagnostic and operative purposes; also those of the chest; cerebral localization, paralysis, etc., and innumerable other facts. Attention is given to the relation of the various tissues and organs to each other, so that the operations on those parts may be understood. It is the object of the course to present to the student the subject of anatomy in such manner as to enable him to utilize it in forming diagnoses and applying methods of treatment.

Instruction is given by demonstrations. These embrace the living and dead body and anatomical preparations. Special dissections and preparations are made to illustrate and explain fractures, dislocations, amputations, ligation of arteries, the position and relation of organs by frozen sections, etc., and also by injections of wax, the affections of the joints, palmar and other abscesses, etc.

A final examination, both written and practical, is held at the completion of the term.

BACTERIOLOGY AND HYGIENE.

ALEXANDER C. ABBOTT, M.D., Sc.D., D.P.H., PEPPER *Professor of Hygiene and Bacteriology.*

DAVID H. BERGEY, A.M., M.D.....*Assistant Professor of Bacteriology.*

NATHANIEL GILDERSLEEVE, M.D....*Associate in Bacteriology.*

HARRY A. SCHATZ, M.D.....*Second Assistant in Bacteriology.*

SYLVESTER J. DEEHAN, M.D.....*Third Assistant in Bacteriology.*

JOHN ANDERSON JOHNSTON, M.D., C.S., THOMAS A. SCOTT *Fellow in Hygiene.*

BACTERIOLOGY.

I. LECTURES. *Professor Abbott.*—A course of lectures preliminary to the practical work of the first-year students is given, one lecture weekly, during the first term. This course comprehends those elementary phases of the subject with which the student should be familiar at the time he begins his practical work.

II. LABORATORY COURSE. *Professor Abbott, Assistant Professor Bergey and Dr. Gildersleeve.*—The course of lectures is followed by the laboratory exercises. These begin about February 1 and continue until the end of the session.

The number of hours given to the practical work in this branch is about one hundred and ninety to each student of the First-year Class. During this time students receive instruction in the use of the microscope in bacteriological work; the methods of cultivating bacteria and of isolating them in pure cultures; the steps necessary to the identification of particular species of bacteria; the relation of bacteria to infection; the methods of immunization and vaccination; the methods of sterilization and disinfection; the testing of disinfectants; the bacteriological study of air, water and soil, etc. Such students as demonstrate ability to advance beyond the class work are given the opportunity to do so, and are encouraged to pursue such studies providing the latter do not interfere with hours assigned to other subjects.

The course in detail covers the following subjects:

1. Apparatus employed—sterilizers, incubators, pressure regulators, thermostats, etc.
2. Culture media, methods of preparation, sterilization methods.
3. Characteristics of cultures of bacteria in general and of special forms.
4. Methods of obtaining, from mixtures of different bacteria, individual species in pure cultures.
5. Microscopic technique. Use and care of instruments, staining from cultures, section cutting, and staining and mounting of tissues.
6. Pathogenic bacteria isolation, identification and inoculation.
7. Disinfection, thermal and chemical, methods and apparatus, modes of testing efficiency.
8. Bacteriological investigation of water.
9. Bacteriological investigation of air.
10. Bacteriological investigation of soil.

HYGIENE.

III. LECTURES. *Professor Abbott.*—The teaching in Hygiene consists of a course of systematic lectures to the Fourth-year Medical students, and, if time be available, of practical exercises in the labora-

tory. The didactic course is compulsory for all students receiving the degree of Doctor of Medicine, while the practical course is voluntary.

The lectures are given twice weekly throughout the first term. They cover the following topics of general sanitary importance:

A consideration of the factors concerned in the direct causation of disease, and the manifold conditions of life that indirectly favor the occurrence of disease among individuals, groups of individuals and communities.

A brief sketch of the important transmissible and epidemic diseases, embracing a discussion of their modes of transmission, portals of infection, geographical and seasonal distribution and the approved methods of their prevention.

A consideration of prophylaxis in general, embracing disinfection and disinfectants, protective vaccination and the anti-toxic state, the disposal of the dead after infectious diseases, and quarantine.

The atmosphere, from the chemical, physical, and biological standpoints; the air of enclosed spaces; the problems of ventilation and heating; the various pollutions of the atmosphere, such, for instance, as those from the soil, from industries, from sewers, etc., and their influence on health and disease.

Water—its sanitary significance; the characteristics of waters from various sources and their suitability to domestic needs; the pollutions to which waters from different sources are liable; the biological significance of these pollutions; interpretations of the results of analyses; natural and artificial purification of waters; the relation of water to health and disease.

Sewage—the part taken by the soil and its constituents in the disposal of organic waste; the characteristics of sewage from different sources; the various methods for the disposal of sewage; the influence of sewage disposal upon the health of communities.

IV. PRACTICAL COURSE. *Professor Abbott and Assistant Professor Bergey.*—The following subjects, arranged especially for the needs of those students intending to enter upon the practical pursuit of sanitary work, are taken up:

1. The atmosphere, climate and meteorological observations and records, chemical analysis, bacteriological investigation, methods of investigation, methods of ventilation and heating.

2. Water—physical, chemical and bacteriological investigation of water-supplies; methods of obtaining samples; qualitative and quantitative analysis for impurities; collection, storage and purification of water intended for domestic use; effects of filters, aeration, etc.

3. Sewage disposal, sewers, house drainage and the air of sewers.

4. Disposal of refuse, cremation of garbage, etc.
5. Soils and building sites, physical, chemical and bacteriological investigation, soil and moisture, ground air.
6. Foods—adulteration, milk and meat inspections.
7. Clothing—microscopic examination, poisonous dyes.
8. Management of contagious diseases. Practical tests of different methods of disinfection, chemical and thermal; notification, isolation and quarantine.
9. Vital statistics, registration and methods of tabulation.
10. Offensive and dangerous trades

V. COURSE IN PUBLIC HEALTH. (See pages 91 and 92.)

VI. ORIGINAL INVESTIGATION. In addition to the foregoing set courses, facilities are offered by the Laboratory for special work. Students and graduates of this school or elsewhere will find opportunities for advanced work in any of the subjects properly coming within the scope of the Laboratory. Arrangements for such work can be made by correspondence with the Director of the Laboratory.

CHEMISTRY AND TOXICOLOGY.

JOHN MARSHALL, M.D.....*Professor of Chemistry and Toxicology.*

LEON A. RYAN, PH.D.....*Assistant Professor of Chemistry and Toxicology.*

HOWARD L. MARSH, B.S.....*Assistant Instructor in Chemistry.*

The course in toxicology is given in the second term of the second year of the medical course. One lecture and one period of laboratory instruction are given each week. Especial attention is devoted to the medico-legal aspects of the subject.

PHYSIOLOGICAL CHEMISTRY.

ALONZO ENGLEBERT TAYLOR, M.D.....BENJAMIN RUSH *Professor of Physiological Chemistry.*

A. I. RINGER, M.D.....*Instructor in Physiological Chemistry.*

W. C. ROSE, PH.D.....*Assistant Instructor in Physiological Chemistry.*

Instruction in Physiological Chemistry is given during the first year of the medical course. The schedule includes three hours of lectures, two hours of recitation and twelve hours of laboratory work

per week for one-half of the academic year. Since all students enter the department with one year of collegiate chemistry and physics, the work of the course in physiological chemistry is confined to organic and strictly physiological chemistry. Following a brief survey of the field of organic chemistry, the course of instruction comprises a systematic survey of the whole field of physiological chemistry, particular attention being devoted to metabolism. The viewpoint of the course is physiology, interpreted from the modern concepts of physics and chemistry. Especial attention is paid to the instruction in analysis, in order that the future physician may be properly equipped to judge and to use approved physical and chemical methods in the investigation of morbid physiology.

The research laboratories of the department are open to workers qualified to undertake original investigations in physiological chemistry.

Graduate Work: Qualified students may elect physiological chemistry, in accordance with the regulations of the Graduate Council.

PHYSIOLOGY.

EDWARD T. REICHERT, M.D.....	<i>Professor of Physiology.</i>
EDWARD LODHOLZ, M.D.....	<i>Assistant Professor of Physiology.</i>
REUBEN A. BOGIA, M.D.....	} <i>Assistants in Physiology.</i>
J. GARRETT HICKEY, M.D., D.D.S...	
DAVID M. P. MAGEE, M.D.....	
FREDERICK O. WAAGE, M.D.....	
JAMES GARRETT MCCOLLIN, M.D...	

The instruction in Physiology embraces systematic courses of lectures, practical work by the student, demonstrations and conferences given during and extending throughout the second year. The students, therefore, before entering upon their work in this department, have been trained in Physiological Chemistry, Anatomy and Normal Histology.

I. LECTURES. *Professor Reichert.*—Four lectures a week on the general subject of Nutrition, from October 1 to February 1.

II. LECTURES. *Professor Reichert.*—Four lectures a week on the Heat Mechanism and the Nervous and Muscular Systems, from February 1 to May 29.

The lectures are copiously illustrated by tables, charts, diagrams and drawings, this being supplemented and considerably extended by the courses of instruction in the demonstration-room and laboratory.

III. STUDENTS' LABORATORY WORK, IN ILLUSTRATION AND EXTENSION OF COURSE I. *Professor Reichert, Dr. Lodholz and assistants.*

IV. STUDENTS' LABORATORY WORK, BEARING A SIMILAR RELATION TO COURSE II. *Professor Reichert, Dr. Lodholz and assistants.*

The course of practical work has been carefully and systematically planned, chiefly upon the *inductive* method of instruction, and seven hours a week are assigned to each student for this work, together with demonstrations and conferences. The main objects sought in the laboratory are: the illustration of the lectures by the most impressive methods; the supplementation of collateral work to further impress important fundamental facts and broaden their application; the training in the use of instruments of precision, with especial reference to the use of apparatus in clinical and experimental medicine; the cultivation of the individual's power of observation and deduction: the encouragement of accuracy of expression and method, of collateral work, and the co-ordination of facts.

The instruction in the practical work is given under the direction of the Professor of Physiology by the Instructor and his assistants. Each student is assigned a table and the necessary apparatus, and works under the direct supervision of the teaching staff. He is directed in technique and in what to observe, but he is self-dependent as to his results and conclusions, which he must present for examination in the form of "graphic records" and written records at the end of each exercise.

V and VI. DEMONSTRATIONS. *Dr. Lodholz and assistants.*—Two corresponding series of demonstrations, which take the place of practical work when the latter is of a character too difficult or otherwise undesirable for the student to pursue; as, for instance, work involving the use of complicated or very expensive apparatus, the employment of mammals, etc. These demonstrations are given in their proper relation to other instruction in physiology.

VII. CONFERENCES. *Dr. Lodholz and assistants.*—Conferences, which cover the subject-matter of the lectures, are held at appropriate times.

VIII. JOURNAL CLUB. Recent work in Physiology is reported by the members of the department, and by those actively engaged in research and advanced work in the laboratories.

IX. SEMINAR. Problems under investigation in the department are introduced for the mutual advantages of discussion. Conducted by Professor Reichert and the staff of the department.

X. GRADUATE COURSES. *Professor Reichert.*—These courses are arranged to suit the requirements of those presenting themselves

for the work. Rooms and apparatus are placed at the disposal of such students, and every facility is offered for the prosecution of research.

XI. ELECTIVE COURSES IN ADVANCED PHYSIOLOGY. *Professor Reichert.*—These are offered to students of the third and fourth years in Medicine. The intention is to give to those who may desire it an opportunity to continue the laboratory work of the previous year in ways that are impossible with large classes, and as a foundation for the prosecution of research.

XII. RESEARCH. The laboratory offers all the advantages of its facilities and equipment for the investigation of problems in Physiology. This may be arranged for at any time by communicating with Professor Reichert.

PATHOLOGY.

ALLEN J. SMITH, M.D.....	<i>Professor of Pathology.</i>
ROBERT A. KEILTY, M.D.....	<i>Acting Instructor in Pathological Histology.</i>
KENNETH M. LYNCH, M.D.....	<i>Acting Instructor in Gross Morbid Anatomy.</i>
JOHN A. KOLMER, M.D.....	<i>Acting Instructor in Experimental Pathology.</i>
F. D. WEIDMAN, M.D.....	<i>Assistant Instructor in Pathology.</i>
KARL SCHÄFFLE, M.D.....	<i>Acting Assistant Instructor in Pathology.</i>
ERWIN P. FABER.....	<i>Instructor in Drawing.</i>

SURGICAL PATHOLOGY.

JOHN SPEESE, M.D.....	<i>Instructor in Surgery.</i>
KARL SCHÄFFLE, M.D.....	<i>Assistant Instructor in Surgery.</i>

NEUROPATHOLOGY.

WILLIAM G. SPILLER, M.D.....	<i>Professor of Neuropathology.</i>
ALFRED R. ALLEN, M.D.....	<i>Instructor in Neuropathology.</i>
S. D. LUDLUM, M.D.....	<i>Instructor in Neuropathology.</i>
SAMUEL LEOPOLD, M.D.....	<i>Assistant in Neuropathology.</i>
WILLIAMS B. CADWALADER, M.D.....	<i>Assistant in Neuropathology.</i>
ÉDWARD M. WILLIAMS, M.D.....	<i>Assistant in Neuropathology.</i>

GYNECOLOGICAL PATHOLOGY.

JOHN G. CLARK, M.D.....	<i>Professor of Gynecology.</i>
CHARLES C. NORRIS, M.D.....	<i>Assistant in Gynecological Pathology.</i>

OPHTHALMIC PATHOLOGY.

GEORGE E. DE SCHWEINITZ, M.D...*Professor of Ophthalmology.*

.....*Assistant in Ophthalmic Pathology.*

OTOLOGICAL PATHOLOGY.

B. ALEXANDER RANDALL, M.D....*Professor of Otology.*

RALPH BUTLER, M.D.....*Assistant in Otological Pathology.*

Instruction in Pathology extends over the second and third years of the medical curriculum. The plan of instruction embraces a general course in pathology under the direct supervision of the chair of Pathology, and a group of courses of applied special pathology, limited to the third year, in charge of the staff of instructors of the clinical branches concerned. In this latter group, which looks eventually toward the presentation of all special applications advantageously taught by laboratory methods, there have thus far been organized laboratories of Surgical Pathology, Neuropathology, Gynecological Pathology, Ophthalmologic Pathology and Otological Pathology. In each division of the subject except the last three named, the plan of teaching includes systematic lectures, demonstrations and practical class exercises.

The general instruction in pathology includes the following courses:

I. GENERAL PATHOLOGY. *Professor Smith and assistants.*—This subject is given to the Second-year Class. Three lectures each week for the first half of the term are devoted to the various retrograde and progressive elementary pathological processes, to regeneration, inflammation, the specific inflammations, tumor formation and to teratology. In the laboratory of pathological histology, each student devotes three periods of two and one half hours each week to the study of illustrative tissues by the microscope, the gross features of the processes discussed being correlated by frequent demonstration of material in the laboratory or in lectures. The projection microscope is employed as an additional means of demonstration of the histological preparations, the essential features of each lesion being pointed out upon the screen to the student at the beginning of the study period.

II. SPECIAL PATHOLOGY. *Professor Smith and assistants.*—Instruction in the special pathology of the various organs, with particular reference to the pathological physiology of each and the development of symptoms of disease, is taken up systematically in lectures in the second half of the second year; and in the laboratory of pathological histology the minute changes of the more important diseases of each organ are studied in as close relation as possible with the lecture instruction. At the same time brief demonstrations of the gross appearances

of the diseased organs are made; and whenever profitable experimental work is introduced for the elucidation of special problems.

In the third year the lectures on special pathology are continued two hours each week—the entire lecture work of this division covering one and one half years.

III. During the third year each student, for two hours each week studies the accumulated autopsy material and especially selected and museum preparations, systematically and by the "case" method. After a preliminary demonstration of the method of performing autopsies, the class is divided into small sections, and as autopsies are being performed in the University Hospital and Blockley Hospital, the students are required to attend, and participate in the work. In the fourth year the students of the various ward classes in the University Hospital attend the autopsies upon those subjects with whose clinical course each class has been familiar in the wards; special instruction, attempting to correlate the pathological findings with the known symptoms of the case in life, being given. Opportunity for the completion of such investigations by histological and bacteriological methods is afforded the student in the laboratories of the department.

IV. ADVANCED WORK.—With the increased space and added facilities afforded by the McManes Laboratory of Pathology the department offers to advanced and post-graduate students special courses in experimental pathology, pathological histology, museum and autopsy work; and opportunity is afforded those suitably trained to undertake special investigations.

In addition to the above, the following work is presented by the various clinical groups in the special departments of the McManes Laboratory of Pathology (the courses VIII, IX and X, however, not given the undergraduate classes):

VI. SURGICAL PATHOLOGY.—(See also *Surgery*, page 60.)

Dr. Speese.—Demonstrations of charts, gross specimens and microscopic specimens, to each member of the class, one and one-half hours a week. This course is supplemental to Dr. Müller's lectures, and aims to present specimens illustrative of the principal surgical diseases. The following subjects are among those demonstrated: repair of wounds, suppuration, abscess, gangrene, ulcer, fistula, sinus; diseases of the thyroid, salivary and mammary glands; repair after fracture, diseases of bones, joints, ligaments, bursæ; diseases of the digestive tract, including the lip, tongue, stomach, gall bladder, liver, pancreas, intestine, appendix and rectum; diseases of the kidney, ureter, bladder, prostate, penis, scrotum and testicle; tumors about the jaw, connective tissue tumors, epithelial skin tumors; diseases of the lymphatic system.

VII. NEUROPATHOLOGY. *Dr. Spiller.*—(See *Neurology*, page 70.)

VIII. GYNECOLOGICAL PATHOLOGY. *Dr. Chas. C. Norris.*

IX. OPHTHALMIC PATHOLOGY. _____

X. OTOLOGICAL PATHOLOGY. *Dr. Ralph Butler.*

PHARMACOLOGY.

ALFRED N. RICHARDS, PH.D.....*Professor of Pharmacology.*

WILSON G. WOOD, M.D.....*Instructor in Pharmacology.*

OSCAR H. PLANT, M.D.....*Instructor in Pharmacology.*

Instruction in pharmacology is given during the second and third years and is required of all candidates for the degree of Doctor of Medicine.

SECOND YEAR. LECTURES. *Professor Richards.* Two hours weekly throughout the year.

In the lectures the physiological action of the important drugs is systematically considered, emphasis being laid upon those features in action which are of importance in relation to therapeutic use or toxicological effects.

CONFERENCES. *Drs. Wood and Plant and Professor Richards.*

Two sections, one hour weekly throughout the year.

The conferences are devoted to informal discussion of the subjects studied in lectures and text book.

LABORATORY WORK IN MATERIA MEDICA AND PHARMACY. *Professor Richards, Drs. Wood and Plant.* Two sections, five hours weekly, November 27 to February 1.

The laboratory work of the first half year includes the practical study of the general physical and chemical properties of the active constituents of drugs; practice in pharmaceutical methods of manufacture, at least one sample of each type of pharmacopeial preparations being made by each student; the study of incompatibilities and of prescription compounding. Along with this work in the laboratory the subject of prescription writing is taken up, the student being required to write each week a number of prescriptions including substances and preparations already studied in the laboratory. A portion of each laboratory period is devoted to criticism of these prescriptions with demonstrations.

LABORATORY WORK IN PHARMACOLOGY. *Professor Richards, Drs. Wood and Plant.* Two sections. Two and one half hours weekly, February 1 to June 1.

The laboratory work of the second half year is devoted to the practical study of drug action. Each section of the class is subdivided into groups of two, three or four students as occasion demands, and each of these smaller groups, under adequate supervision, performs experiments which demonstrate the action exerted by drugs upon the important physiological mechanisms—nervous system, respiration, circulation, kidney, gastro-intestinal tract, etc. Important experiments which cannot be successfully performed by students are shown in demonstration.

THIRD YEAR. PRACTICAL THERAPEUTICS. *Dr. Wood.* Two sections. One and one half hours weekly, December 1 to June 1.

In this course pharmacology is studied in relation to definite problems in the treatment of disease. In it, the more important features in a variety of conditions of disease are outlined and histories of cases previously studied by the instructor in charge are given out. The student is required to plan drug treatment based, in so far as is possible, upon the known action of the drugs which might be chosen and the nature of the conditions to be treated, and to write the prescriptions and instructions covering it. These outlines and prescriptions are critically discussed in the light of the results of the treatment which was actually applied in the cases studied.

RESEARCH. The research laboratories of the department are open to a limited number of qualified workers.

MEDICINE.

ALFRED STENGEL, M.D., Sc.D.....	<i>Professor of Medicine.</i>
JOHN H. MUSSER, M.D., LL.D.....	<i>Professor of Clinical Medicine.</i>
M. HOWARD FUSSELL, M.D.....	<i>Professor of Applied Therapeutics.</i>
DAVID RIESMAN, M.D.....	} <i>Assistant Professors of Medicine.</i>
JOSEPH SAILER, M.D.....	
GEORGE W. NORRIS, M.D.....	
WILLIAM PEPPER, M.D.....	<i>Assistant Professor of Clinical Pathology.</i>
ARTHUR A. STEVENS, M.D.....	<i>Lecturer on Medicine.</i>
B. FRANKLIN STAHL, M.D.....	<i>Lecturer on Dietetics of the Sick and Associate in Medicine.</i>
HERMAN B. ALLYN, M.D.....	} <i>Associates in Medicine.</i>
H. R. M. LANDIS, M.D.....	
ALBERT P. FRANCINE, M.D.....	
B. F. STAHL, M.D.....	

JOHN M. CRUICE, M.D.	} <i>Instructors in Medicine.</i>
CLIFFORD B. FARR, M.D.	
FRED H. KLAER, M.D.	
THOMAS A. COPE, M.D.	
E. H. GOODMAN, M.D.	
GEORGE MORRIS PIERSOL, M.D. ..	
FRANK A. CRAIG, M.D.	
ROBERT G. TORREY, M.D.	
C. M. MONTGOMERY, M.D.	} <i>Assistant Instructors in Medicine.</i>
J. T. ULLOM, M.D.	
THOMAS C. KELLY, M.D.	
W. G. TURNBULL, M.D.	
A. H. HOPKINS, M.D.	
E. B. KRUMBHAAR, M.D.	
O. H. P. PEPPER, M.D.	
A. A. HOWELL, M.D.	

Outline.—The course in Medicine is a systematic one, beginning in the second half of the second year and leading up to the abundant opportunities for individual study of cases assigned to the students as ward workers in the fourth year. The details regarding the instruction are given later; the main features in the several years are as follows:

SECOND YEAR. *Physical Diagnosis.*—Lectures and practical work begin during the second half of the year. The course is designed to teach the principles of physical diagnosis with exposition of the physical laws involved. Reference to diseases is avoided, but the bearing of physiological and anatomical facts on clinical investigation is emphasized.

THIRD YEAR. *Practical work in the Medical Dispensary.*—The students in small sections attend the Medical Dispensary for two hours one day in the week throughout the year. They are required to prepare histories, make physical examinations and assist in the work of the dispensary. The instructors demonstrate cases and correct the work done by the students.

Laboratory work in Clinical Pathology.—One lecture weekly to the whole class and section work of two hours one day in the week (sixty hours) throughout the year, comprise the work in this branch.

Medical Ward Classes.—Small subsections attend ward classes at the Philadelphia Hospital. These classes are intended to carry the instruction on to the complete study of medical conditions, including physical examination, diagnosis and treatment.

Observation Classes and Medical Clinics.—During the first half of the year the class attends clinical demonstrations of cases presented in groups to illustrate the external features of diseased conditions. During the second term two clinics weekly are given to extend the student's knowledge of disease.

Systematic Lectures.—The class with the fourth-year class attends two lectures weekly. These lectures are intended to present the relations of the fundamental sciences to practical medicine with sufficient attention to the systematic description of diseases to enable the student to grasp the meaning of the fundamental sciences in their relations to practical medicine.

Applied Therapeutics.—Two lectures weekly, illustrated by clinical cases, are given throughout the year to supplement the didactic lectures on medicine.

Dietetics of the Sick.—Lectures and practical demonstrations.

FOURTH YEAR. *Ward Work.*—Sections of the class are assigned to the wards of the University Hospital, the Philadelphia General Hospital and the Phipps Institute. During their work in these hospitals cases are assigned to the students so that each one has charge under the instructors and resident physicians of a certain number of cases and is required to record histories, daily notes of progress and the results of treatment and to make all necessary laboratory examinations. The student is in the wards three hours during five days in the week, and one hour daily one of the instructors makes rounds accompanied by the students in the ward.

Ward Classes.—A limited number of ward classes for a thorough and advanced discussion of important clinical conditions is held at the Philadelphia General Hospital.

Clinics.—The Professor of Clinical Medicine gives one clinic weekly throughout the year.

Clinical Conferences.—The Professor of Medicine and the Professor of Clinical Medicine each gives before the whole class one clinical conference in Medicine with the active co-operation of the students for the time being in attendance in the medical wards of the University Hospital.

Systematic Lectures.—The class with the third-year class attends two lectures weekly as before described.

In general the course of instruction is so arranged that beginning in the second year the greatest amount of aid and personal instruction is given to the student in the earlier period of his studies and less supervision is exercised as his experience increases. The object is to encourage independence of work and thought as far as may be advantageous.

SECOND YEAR.

PHYSICAL DIAGNOSIS.—*Dr. Norris* gives lectures and demonstrations on physical diagnosis one hour a week during the last half of the year. These are devoted to an exposition of the general principles of the subject rather than to a study of the physical signs in special diseases.

In addition to the lectures, each student has two hours' practical work a week under Drs. Norris, Montgomery and Krumbhaar, the class being divided into small sections. These classes are devoted almost entirely to normal conditions, the signs of disease being used only as an occasional contrast to the normal, the actual study of signs of special diseases being carried out in the third year.

THIRD YEAR.

SYSTEMATIC LECTURES.—*Professor Stengel* lectures twice weekly to the third and fourth year classes completing in the two years the study of medical diseases. These lectures are intended as a general exposition of the relations of the fundamental sciences to practical medicine with a sufficient systematic description of diseases to furnish a basis for further study. In addition to the lectures topics for reading are assigned so that the student may be guided in his work.

OBSERVATION CLASSES.—*Dr. Stevens* conducts these classes, and follows the special purpose of training the student's powers of observation in recognizing the meaning of the objective signs of disease.

MEDICAL CLINICS.—*Drs. Riesman and Sailer* conduct medical clinics at the Philadelphia General Hospital, each one hour weekly during the second term. These clinics will follow the Observation Classes and extend the student's knowledge to a fuller understanding of disease.

WARD CLASSES.—*Drs. Stevens, Allyn and Turnbull* conduct these classes in the Philadelphia Hospital. The class is divided into small sections, and each section has one hour of this work each week. These classes are devoted to objective study and demonstration of the physical signs of disease.

MEDICAL DISPENSARY.—The class is divided into small sections and assigned to the Instructors in the Medical Dispensary—*Drs. Klaer, Torrey, O. H. P. Pepper and Howell*. The students take histories of new cases, make physical examinations and assist in the work of the Dispensary. Demonstrations of selected cases are made by the Instructors and various methods of clinical investigation are carried out with the assistance of the students.

Besides the regular work, many students avail themselves of the opportunities offered to act as clerks in the Dispensary of the Uni-

versity Hospital throughout the year, and in the same place or elsewhere during vacations.

APPLIED THERAPEUTICS.—*Professor Fussell* lectures twice weekly to the third-year class, with illustrative cases as the basis of discussion of methods of treatment. All forms of medical and non-medical therapeutics are discussed and as far as possible demonstrated before the students.

CLINICAL LABORATORY COURSE.—*Dr. Pepper* gives a lecture and demonstration one hour a week to the third-year class, and together with Drs. Cope, Kelly and Hopkins conducts the laboratory exercises. In these the class is divided into sections, each section receiving two hours' work each week, in practice on the methods of chemical and microscopical examination of the urine, blood, sputum, stomach contents, feces, etc.

DIETETICS OF THE SICK. *Dr. B. Franklin Stahl.*—One lecture a week during the last half of the year is given, with the purpose of providing the students an understanding of foods and their composition and preparation, and demonstrations are given of the methods of preparing various foods suitable for different individuals, the demonstrations being made sufficiently elementary to be readily comprehended and remembered, and to illustrate the influence of cooking upon the food selected. The dietetic treatment of the various diseases is later taken up. The diet in disease is illustrated by showing trays of food prepared for patients suffering from diseases under consideration, and thus practical lessons are provided exhibiting the variety of diet that may be secured from a limited number of food materials.

FOURTH YEAR.

SYSTEMATIC LECTURES. (See Third Year.)

CLINICAL CONFERENCES.—*Professors Stengel and Musser* take up, in systematically subdivided form, the discussion of all the important medical conditions, so that the whole subject may be illustrated so far as this is feasible—dangerously contagious diseases and others that do not occur in this region being, of course, excepted.

In these conferences, students who have studied the cases in the wards are called to the bedside before the class and discuss the cases with the lecturer, and at times contribute short papers on specially assigned subjects.

In all the above classes the students in charge of the case are required to report completely on the case in hand, including the history and general examination and any desirable clinical laboratory findings, the examination of the blood and urine being always required.

The conferences deal especially with questions of diagnosis or treatment.

Professor Musser also conducts one clinic each week in which a more general discussion of medical conditions is presented.

WARD CLASSES.—*Drs. Riesman and Sailer* meet sections three times weekly at the Philadelphia Hospital in advanced ward classes which deal especially with differential diagnosis and treatment. *Drs. Francine and Turnbull* meet one-third of the class for two hours each week and demonstrate especially important cases from the rich material in the tuberculosis wards at the Philadelphia Hospital.

WARD WORK.—The medical ward work is arranged in periods of five weeks' continuous service in the medical ward at the University Hospital, five weeks at the Philadelphia Hospital and five weeks at the Phipps Institute. At the latter place the work is subdivided into a period in the wards studying non-tuberculous subjects under *Dr. Craig*, work in the Dispensary on cases of varied character under *Drs. Landis, Ullom and Montgomery*, attendance at "tuberculosis classes" under *Dr. Landis*, and a period of service outside under *Mr. Wilson* in the social work of the Institute in which the student has opportunity to meet some of the problems of home treatment as regards general hygiene, diet, occupation and various other practical problems of treatment, especially among the poor. In addition to the remarkable opportunities for studying chest disorders especially, that the Phipps Institute affords, a striking collection of anatomical and pathological preparations has been provided there which greatly illuminate questions of chest diagnosis.

At the University Hospital there are regular ward rounds on five days of the week by Professors *Stengel and Musser*, and *Drs. Piersol, Goodman, Pepper and Norris*, and at the Philadelphia Hospital by *Drs. Farr and Torrey*. Some of these teachers are also in the wards practically all of each morning, and the students are thus under supervision constantly, and advice is always at hand; but their work is done by themselves, and at the ward rounds reports are made to the instructor on the nature, progress, etc., of each case by the student assigned to it, each student having several cases under his care. The group have opportunity to see all special kinds of treatment that goes on in the ward and to follow, and to some extent to suggest, the treatment of the cases under observation.

Each student thus gets fifteen weeks' experience in medicine in his mornings, which is comparable to that of a hospital interne, with added constant aid and advice from senior instructors.

LABORATORY WORK.—Each student of the fourth-year class is supplied with a working place in the New Clinical Laboratory, which

is immediately adjacent to the hospital wards, where he is furnished with a locker containing all necessary apparatus. He is required to make routine examinations, in which assistance is available when needed, of all material from patients assigned to him in any of the departments during his final year. The laboratory is open at all times during the day, and the student has access to his working place at any leisure time for such work, or for any other laboratory work that he may desire to carry out. At the Phipps Institute laboratory facilities are provided for the students working there.

OTHER EXTRAMURAL TEACHING.—The roster is arranged so that the students of the third-year and fourth-year classes are free to attend the medical clinics at the Pennsylvania and Philadelphia Hospitals on Saturdays. Other medical clinics may also be attended by the members of the same classes, and volunteer work in connection with various other hospitals is easily secured, particularly during vacation.

CLINICO-PATHOLOGICAL DEMONSTRATIONS.—All autopsies held at the University Hospital will be attended by the students on duty in the ward in which the case under examination occurred. The pathologist conducts the autopsy, the clinicians in charge of the case first explaining the clinical aspects of the condition.

NUMBER OF HOURS DEVOTED BY EACH STUDENT TO MEDICINE.

<i>Second Year.</i>		Hours
Lectures on Physical Diagnosis.....	16	
Practical Work in Physical Diagnosis.....	48	
<i>Third Year.</i>		
Systematic Course in Medicine.....	64	
Systematic Therapeutic Course.....	64	
Observation Classes.....	16	
Ward Classes and Dispensary.....	90	
Clinical Laboratory Course.....	60	
Medical Clinics.....	32	
Lectures on Dietetics of the Sick.....	16	
<i>Fourth Year.</i>		
Systematic Course in Medicine.....	64	
Clinical Conferences.....	96	
Medical Clinic.....	16	
Ward Classes.....	8	
Ward Work.....	150	
Total.....	740	

PEDIATRICS.

J. P. CROZER GRIFFITH, M.D.....	<i>Clinical Professor of Pediatrics.</i>
THOMPSON S. WESTCOTT, M.D.....	} <i>Associates in Pediatrics.</i>
MAURICE OSTHEIMER, M.D.....	
CHARLES A. FIFE, M.D.....	} <i>Instructors in Pediatrics.</i>
HOWARD C. CARPENTER, M.D.....	
J. CLAXTON GITTINGS, M.D.....	

The course in Pediatrics consists of lectures, ward classes and ward work at the University Hospital, the Philadelphia Hospital and the Children's Hospital.

The lectures are conducted by the Clinical Professor of Pediatrics in the medical amphitheatre of the University Hospital once a week. Special lectures are given upon the general diagnosis, symptomatology and treatment of disease in children. The more important subjects receive systematic and full discussion, among these being such topics as pneumonia of childhood, gastrointestinal diseases, typhoid fever in infancy and childhood, forms of paralysis, the feeding of infants, etc., etc. In addition to these, the Children's Ward and Dispensary are drawn upon for clinical lectures on the various diseases presenting themselves.

The ward classes are conducted at the University Hospital by Dr. Ostheimer, at the Children's Hospital by Dr. Westcott, and at the Philadelphia Hospital by Drs. Carpenter and Fife. Subsections of the class, consisting of from eight to fifteen students, attend these ward classes three times a week and have the opportunity of examining the patients under the direction of the instructor, and in addition learn the practical management of the diseases of children as conducted in the Hospital wards. The exceptional richness and variety of material afforded by the Children's Hospital make this part of the course a valuable feature. In addition to the work mentioned the students, in small groups, are assigned personal supervision of certain cases in the wards in the University Hospital, making daily observations of them and attending the ward visits of the assistant pediatric physicians, Drs. Ostheimer, Gittings, Fife and Carpenter.

PHYSICAL THERAPY.

R. TAIT MCKENZIE, A.B., M.D.....*Professor of Physical Therapy.*

Instruction in this subject as at present organized, consists of a course of lectures, given twice a week, to the members of the second-year class upon the application of exercise and massage in the treatment

of disease, with special lectures given to the fourth-year class in the courses of Medicine and Surgery. Extension of the subject matter to include the therapeutic use of other physical agencies, as temperature, light, electricity, the different forms of baths, etc., together with practical exercises and demonstrations, is contemplated with the further organization of the work.

SURGERY.

EDWARD MARTIN, M.D.....	JOHN RHEA BARTON	<i>Professor of Surgery.</i>
JOHN B. DEEVER, M.D.....		<i>Professor of the Practice of Surgery.</i>
CHARLES H. FRAZIER, M.D.....		<i>Professor of Clinical Surgery.</i>
HENRY K. PANCOAST, M.D.....		<i>Professor of Roentgenology.</i>
ALFRED C. WOOD, M.D.....		<i>Assistant Professor of Surgery.</i>
J. EDWIN SWEET, M.D.....		<i>Assistant Professor of Surgical Research.</i>
RICHARD H. HARTE, M.D.....	}	<i>Adjunct Professors of Surgery.</i>
JAMES P. HUTCHINSON, M.D.....		
JOHN B. CARNETT, M.D.....		
JOHN H. JOPSON, M.D.....		
GEORGE P. MÜLLER, M.D.....	}	<i>Associates in Surgery.</i>
T. TURNER THOMAS, M.D.....		
JOHN SPEESE, M.D.....		
BENJAMIN A. THOMAS, M.D.....		
GEORGE G. ROSS, M.D.....	}	<i>Instructors in Surgery.</i>
ALBERT D. WHITING, M.D.....		
DAMON B. PFEIFFER, M.D.....		
A. P. C. ASHHURST, M. D.....		
A. B. EISENBREY, M.D.....	}	<i>Assistant Instructors in Surgery.</i>
JOHN BUSCH, M.D.....		
CHARLES F. MITCHELL, M.D.....		
ELDRIDGE L. ELIASON, M.D.....		
KARL SCHÄFFLE, M.D.....		
GEORGE M. LAWS, M.D.....		
ROBERT H. IVY, M.D.....		
HENRY WINSOR, M.D.....		

The course in Surgery extends over a period of two years—the third and fourth years—and is conducted by the Professor of Surgery, Professor of Practice of Surgery, Professor of Clinical Surgery, Professor

of Roentgenology, Assistant Professor of Surgery, two Adjunct Professors, an Assistant Professor of Surgical Research, four Associates in Surgery and a corps of clinical instructors.

The course, which includes instruction in the principles and practice of surgery, in surgical pathology, in practical minor surgery, in operative surgery and in bedside, dressing room and dispensary practice, is so planned that the subject may be systematically covered in both theory and, in so far as this is practicable, in practice. The methods of teaching are designed to familiarize the student with the principles of pathogenesis, to develop his powers of observation, to familiarize him with the principles underlying treatment and to enable him, under supervision and subject to skilled criticism, to make practical application of this knowledge in the wards, the dispensaries, the clinical conferences and the operating room. Before graduation each student is required to have administered a general anæsthetic under skilled supervision to at least three patients.

The courses include: 1. Emergency Treatment. 2. Bandaging. 3. Minor surgery, including fracture dressings. 4. Surgical Pathology. 5. Dispensary service. 6. Clinical conferences and lectures. 7. Roentgenology. 8. Surgical research. 9. Operative surgery. 10. Ward classes. 11. Operating clinics. 12. Systematic lectures.

1. EMERGENCY TREATMENT: *Dr. Eliason*.—To the first-year class for one half the year. Lectures and practical demonstration.

2. BANDAGING. *Dr. Whiting*.—For half the term men of the second-year class are given individual instruction in the fundamental principles underlying the use of the bandage and in its practical application, this drill being continued until each man is sufficiently expert to become serviceable in dispensary practice and ward work.

3. MINOR SURGERY. *Dr. Wood, assisted by Dr. Eliason and Dr. Busch*.—Third-year class one hour a week throughout the year. In this course the following subjects are described and illustrated: Preparations for operation, including the various surgical dressings and materials employed and their application; Indications for drainage and methods for securing it; Hemorrhage; Shock; Fixed dressings; Adhesive plaster; External applications; Venesection; Transfusion; Hypodermoclysis; Proctolysis; Anesthesia; Sutures; Ligatures; Hypodermic injections; Aspiration; Tapping; Individual drill in fracture dressing.

4. SURGICAL PATHOLOGY. *Dr. G. P. Müller*, one hour a week during the first half of the third year. A clinical lecture illustrated by patients from the wards of the hospital. Minor diseases, such as wounds, cellulitis, ulcer, fistula, sinus, etc., are discussed and such available

material as may correlate is shown. Especial emphasis is laid upon the etiology and pathology of these diseases. This course of lectures is conducted in correlation and supplemental to the course in the Laboratory of Surgical Pathology, in charge of Dr. John Speese (see under Pathology). See also under Systematic Lectures in Surgery.

5. DISPENSARY SERVICE. *Dr. B. A. Thomas, assisted by Drs. Laws, Ivy and Willard.*—One month of dispensary service is required of each student before graduation. In addition to the dispensary of the University Hospital, the Howard (*Dr. Eliason*) and the Pennsylvania Hospitals (*Dr. Mitchell*) are available. The student serves as an assistant, thus becoming familiar with the treatment of sprains, fractures, dislocations, wounds and surface infections which constitute the majority of affections attending an Out-Patient Department. He is also given the opportunity to perform such minor surgical operations as naturally belong to such a service. The full service is usually made up voluntarily during vacation periods.

6. CLINICAL CONFERENCES AND LECTURES. *Dr. Frazier* conducts a clinical conference for one hour weekly before the fourth-year class, at which are discussed major surgical topics. It is illustrated by patients, lantern slides and charts.

Drs. Wood and T. T. Thomas each one hour a week to sections of the fourth-year class, each section one third of the class. Patients are discussed by individual students in regard to the etiology, pathology and diagnosis and treatment of the surgical affections which they exhibit.

Dr. Carnett, one hour each week before the third-year class; clinical study of cases by individual students with discussion and criticism.

Dr. Eliason, one hour a week to the third-year class. Especial attention given to minor conditions requiring surgical treatment. Performance of minor operations by students.

Dr. Ross, one hour a week to third-year men, a clinical lecture following the lectures of the professor of surgery and the operations of the professor of the practice of surgery.

Dr. Pfeiffer, one hour a week to the fourth-year class devoted to a clinical lecture upon subjects cognate to the clinics of Professor Deaver and to demonstrations of surgical after-treatment.

7. ROENTGENOLOGY. *Professor Pancoast.*—A series of lectures and demonstrations covering the diagnostic and therapeutic application of X-rays, and the interpretation of radiograms.

8. SURGICAL RESEARCH. *Dr. Sweet.*—This is an elective course open to a limited number of men of the third and fourth year classes who by inclination and personal qualities demonstrate an especial

fitness for the practice of surgery. The object of the course is to give such qualified men opportunity to practice the fundamental principles of surgery in work upon research problems which bear directly upon the betterment of surgical practice.

9. OPERATIVE SURGERY. *Dr. Jopson, assisted by Drs. Ashhurst, Eliason, Laws, Speese and Skillern.*

The course comprises didactic instruction given to the third-year class and practical work upon the cadaver. The theory and technique are covered by a series of weekly lectures, the general principles of Operative Surgery being emphasized and the steps in the various operations illustrated by diagrams, lantern slides and demonstrations on the cadaver.

For the practical work the class is divided into sections which work in the Laboratory of Operative Surgery performing the various operations upon the cadavers under the supervision of Dr. Jopson and his assistants. Special attention is paid to the typical major operations, to those included under emergency surgery and to the acquirement by the student of facility in general operative technique.

An Elective Course in Operative Surgery under the charge of Dr. Ashhurst, assisted by Dr. Winsor, open to the fourth-year men, is also given and exceptional facilities have recently been provided in the furnishing of a special operating room and ample equipment for this work. The students in this course practice with full attention to detail all the operations which can be demonstrated upon the cadaver.

10. WARD CLASSES. *Drs. Carnett, Müller, Eliason, Ross, Whiting, Pfeiffer and Eisenbrey.*—One-third of the class six hours a week for one-third of the term. Surgical patients are assigned to individual students; each student is required to take a detailed history, make a complete physical examination with special reference to surgical lesions, carry out such special tests as are indicated and follow the progress of each patient assigned to his care, keeping a written record of the results of bedside observation and study. Laboratory facilities are provided for each student so that he may examine the blood, feces and urine when this is required. X-rays are available when such pictures are needed. The student is directed and supervised in his work and is encouraged to make suggestions relative to the care and treatment of the patient. He assists at the operations performed upon patients under his charge and, under supervision, is permitted to dress the wounds.

11. OPERATING CLINICS. *Professors Martin, Deaver, Frazier and Wood, and Drs. Carnett, T. T. Thomas and Müller.*

Professor Deaver, one-third the fourth-year class for two periods of two hours each for one-third of the term. Special attention is given to surgical diseases of the abdomen and an opportunity is afforded to students assigned to a case to take part in the operation.

Professor Martin, one ninth of the fourth-year class for one period of three hours.

Professor Frazier, one ninth of the fourth-year class for two periods of an hour and a half.

Professor Wood and Drs. T. T. Thomas, Carnett and Müller, one ninth of the fourth year class for a period of two hours.

10. SYSTEMATIC LECTURES. *Professor Martin*.—Two hours a week to the third and fourth year classes.

Dr. Müller, one hour a week to the third-year class covering the general subjects of injury, infection and tumors, including wounds, hemorrhage, shock, embolus, cellulitis, abscess, ulcer, gangrene, peritonitis, etc., benign and malignant tumors. The lectures are illustrated where possible by lantern slides, charts or patients from the hospital wards.

NUMBER OF HOURS DEVOTED BY EACH STUDENT TO SURGERY.

	Hours
Surgical Pathology.....	20
Systematic Lectures.....	330
Surgical Clinics.....	40
Surgical Ward Classes.....	60
Minor Surgery.....	30
Operative Surgery, Required.....	12
Operative Surgery, Elective.....	48
Ward Work.....	80
Surgical Dispensary (Mural and Extramural; usually done in the vacation period).....	24
Surgical Research, Elective.....	180
Total.....	824

ORTHOPEDIC SURGERY.

G. G. DAVIS, M.D., M.R.C.S., Eng., LL.D..... *Professor of Orthopedic Surgery.*

JAMES K. YOUNG, M.D..... *Associate Professor of Orthopedic Surgery.*

WALTER G. ELMER, M.D.	}	<i>Instructors in Orthopedic Surgery.</i>
THOMAS A. O'HARA, M.D.		
ROBERT L. GRAY, M.D.		
WILLIAM JACKSON MERRILL, M.D.		
FRANK D. DICKSON, M.D.		
DE FOREST P. WILLARD, M.D.		<i>Assistant Instructor in Orthopedic Surgery.</i>

The instruction in Orthopedic Surgery is confined to the fourth year.

I. CLINICAL INSTRUCTION.—Clinical instruction is given one hour a week from February 1 to the close of the session. This course includes the surgical and mechanical treatment of congenital malformations, deficiencies and deformities; also of acquired distortions and deformities the result of disease or injury, joint and bone diseases, rickets, infantile spinal and cerebral paralysis, etc., etc.

II. WARD CLASS WORK. *Drs. Elmer, Merrill and Dickson.*—For ward teaching, the fourth-year class is divided into small sections, which meet once a week during the entire session. Cases in the wards and dispensary are employed to perfect each student in personal diagnosis and treatment. Instruction is also given in the application of apparatus, plaster-of-Paris and corrective dressings; the construction of braces; the treatment of lateral curvature, paralysis, etc. Each student is expected personally to perform all the necessary manipulations.

A specially equipped orthopedic gymnasium connected with this department is in daily use for demonstrating methods for the correction of deformities and the development of muscular power.

III. WORK IN OUT-PATIENT DEPARTMENT. Dispensary work is continued daily throughout the year. Students desiring special practical work can arrange for certain periods in the Dispensary.

GENITO-URINARY DISEASES.

THOMAS R. NEILSON, M.D.	<i>Clinical Professor of Genito-Urinary Diseases.</i>	
E. HOLLINGSWORTH SITER, M.D.	<i>Instructor in Genito-Urinary Diseases.</i>	
ALEXANDER A. UHLE, M.D.	}	<i>Assistant Instructors in Genito-Urinary Diseases.</i>
W. H. MACKINNEY, M.D.		
JOHN L. LAIRD, M.D.		

Instruction in Genito-Urinary Diseases is given in the third and fourth years.

LECTURES. *Professor Neilson.*—To the third-year class, for one-half of the year, a systematic course of lectures is given, covering the surgical diseases and injuries of the genito-urinary organs, including the venereal diseases.

WARD CLASSES. *Professor Neilson and Drs. Siter, Uhle, Mackinney and Laird.*—Ward classes, for which the class is divided into sections, are held twice a week throughout the year in the Out-Patient Department. The students are afforded excellent opportunity to become familiar with the methods of diagnosis and treatment of diseases of the genito-urinary apparatus by personal observation, and by practical work under the guidance of the teachers. House cases requiring operation are operated on by the professor before the class.

At the Philadelphia Hospital subsections of the class receive instruction from Drs. Siter, Uhle and Mackinney in the Venereal Wards four times a week. The rich and abundant material which these wards offer gives to the student unsurpassed opportunities for observation and study.

GYNECOLOGY.

JOHN G. CLARK, M.D.....	<i>Professor of Gynecology.</i>
HENRY D. BEYEA, M.D.....	} <i>Associates in Gynecology.</i>
BROOKE M. ANSPACH, M.D.....	
CHARLES C. NORRIS, M.D.....	} <i>Instructors in Gynecology.</i>
WILLIAM B. SMALL, M.D.....	
FLOYD E. KEENE, M.D.....	

The instruction in Gynecology extends throughout the third and fourth years and comprehends:

THIRD YEAR.

I. RECITATION AND LANTERN DEMONSTRATIONS. One hour a week devoted either to recitations or to lantern demonstrations by Professor Clark. It is intended that the demonstrations shall fully supplement the recitations, thus rendering as clear as possible the histologic, anatomic, and pathologic, as well as the operative side of Gynecology. The third-year instruction is entirely theoretic, and is intended to prepare the student for his practical work of the fourth year.

FOURTH YEAR.

II. CLINICAL WARD CLASSES. *Professor Clark or Dr. Anspach.*—Three times a week. The class is divided into sections, which attend the clinical ward classes. These sections are further subdivided into

small groups of students who see all cases with the professor or instructors before any plan of treatment is instituted. The history of the case is carefully reviewed; and, instead of the usual clinical lecture preceding an operation, the special group of students for the day are closely quizzed on all points relative to diagnosis, treatment, and prognosis. Immediately after the operation, all points on the technique of the operation, the post-operative care of the patient, the possible complications, and the ultimate prognosis are fully considered.

III. CLINICAL CONFERENCE.—Once a week. During this Conference the clinical reporters for each ward class give in detail the histories of cases seen during the preceding week, with treatment and results. The instructor merely acts as a guide in these conferences, the students carrying the burden of the discussion.

DERMATOLOGY.

MILTON B. HARTZELL, A.M., M.D., LL.D...*Professor of Dermatology.*

F. C. KNOWLES, M.D.....*Instructor in Dermatology.*

I. LECTURES.—One lecture weekly is given to the members of the entire third-year class, the subject-matter being descriptive of the commoner diseases of the skin as met with in this country. The lectures are abundantly illustrated by charts, paintings, photographs, wax and papier-maché models. The course begins October 1 and terminates February 1.

II. CLINICS.—Once weekly to the third-year class, February 1 to the close of the session. A number of cases are exhibited and commented on in such a manner as to render the clinical features of the disease plain.

III. WARD INSTRUCTION.—Four times weekly to sections of the fourth-year class in the wards of the Philadelphia General Hospital and in the Skin Dispensary of the University Hospital, the students thus coming in contact with cases.

OPHTHALMOLOGY.

GEORGE E. DE SCHWEINITZ, M.D.....*Professor of Ophthalmology.*

JOHN T. CARPENTER, M.D.....*Lecturer in Ophthalmology.*

EDWARD A. SHUMWAY, M.D.....	} <i>Instructors in Ophthalmology.</i>
THOMAS B HOLLOWAY, M.D.....	
H. MAXWELL LANGDON, M.D.....	
CARL WILLIAMS, M.D.....	

I. PRACTICAL WORK IN THE PHYSIOLOGICAL LABORATORY. The second-year men are each provided with suitable appliances, an optical box, an ophthalmoscope, an artificial eye, color tests, etc., and are instructed in the rudiments of physiological optics and in the physiology of the eye. This course, which consists of a series of laboratory hours, is conducted by the Professor of Physiology and his assistants.

II. LECTURE DEMONSTRATIONS AND CLINICAL LECTURES. *Professor de Schweinitz*.—These are given twice a week, from the first of October until the first of February, to members of the third-year class. The subjects covered in this course comprise the methods of examining the patient and the external examination of the eye; functional testing; diseases and injuries of the eye; the eye in its relation to general diseases; medical ophthalmoscopy and medical ophthalmology; and operative ophthalmology. The clinical lectures in this course continue throughout the academic year. Thirty-five hours are devoted to the entire course.

III. PRACTICAL WORK. *Drs. Carpenter, Shumway, Holloway, Williams and Langdon*.—Daily clinics are given in the Dispensary and in the wards of the Philadelphia Hospital. The students of the third-year class are divided into sections of about thirty men, and each of these sections subdivided into smaller sections of ten. Each subsection has the opportunity in turn of closely inspecting the patients with external inflammatory diseases of the eye, of seeing the method of applying the remedies, of making the commoner applications utilized in the treatment, of learning the use of the ophthalmoscope so that each student may recognize the healthy fundus and its important diseased conditions; and of ascertaining the results secured by functional testing, such as the pupillary reflexes, the visual acuity, the field of vision, the balance of the external ocular muscles, and the refractive errors. The number of hours devoted to this course is forty-eight.

IV. The students of the fourth year have the opportunity of electing a continuation of the instruction in Ophthalmology by attendance on the clinical lectures, which continue throughout the academic year, and by work in the Eye Dispensary one hour weekly.

OBSTETRICS.

BARTON COOKE HIRST, M.D.....*Professor of Obstetrics.*

RICHARD C. NORRIS, M.D.....*Assistant Professor of Obstetrics.*

JOHN H. GIRVIN, M.D.....	} <i>Associates in Obstetrics.</i>
WILLIAM R. NICHOLSON, M.D.....	
JOHN C. HIRST, M.D.....	

J. H. ALLEN, M.D.....	} <i>Assistant Instructors in Ob-</i> <i>stetrics.</i>
L. F. LUBURG, M.D.....	
E. P. BARNARD, M.D.....	
N. L. KNIPE, M.D.....	

A graduated course of instruction in Obstetrics is given to the members of the third and fourth-year classes in the Maternity Pavilion of the University Hospital, in the New Medical Laboratories and in the Out-Patient Department of the Hospital, conducted under the direct control of the Professor of Obstetrics.

I. CLINICS. *Professor Hirst.*—Two clinical lectures a week are given to the third-year class, the large clinical material of the Maternity Department being used to illustrate a systematic course of lectures on the complications of gestation, labor and the puerperium.

II. DEMONSTRATIONS. Demonstrations of palpation, pelvimetry and the signs of pregnancy are given to sections of four students; routine examinations of urine; attendance on labor cases; demonstrations of the injuries of parturition and their repair.

III. CLINICAL AND OPERATIVE OBSTETRICS. *Professor Hirst.*—One clinic a week to the fourth-year class, devoted to the surgical treatment of all the complications and pathological consequences of the childbearing act at all periods, is given in the maternity amphitheatre.

IV. WARD WORK. Every morning from 10 to 12 a small section of the class assists in the repair of injuries of the genital canal, in the closure of abdominal wounds, in the local treatment of genital infections, the final examination of the puerpera, etc. A special course in cystoscopy is given.

V. OBSTETRICAL OPERATIONS. *Professor Hirst.*—In the Anna Dike Scott Memorial Amphitheatre an exhibition of all obstetrical operations is given to the members of both the third and fourth-year classes.

VI. PRACTICAL EXERCISES WITH MANIKINS AND FETAL BODIES. *Assistant Professor Norris.*—Each student devotes eight hours to the practice upon the manikin of the obstetrical operations.

VII. PRACTICAL EXERCISES IN THE OUT-PATIENT DEPARTMENT. This department is under the direct control of the Professor of Obstetrics. The total indoor and outdoor service amounts to 2,000 cases a year. The complicated cases in this service demanding operative treatment are transported to the University Hospital, and the operations are exhibited to the combined third and fourth-year classes. Each student attends in confinement from six to eight labor cases and serves as assistant in the ambulatory dispensary for a week, when he is trained in gynecological diagnosis.

NEUROLOGY.

CHARLES K. MILLS, M.D.....	<i>Professor of Neurology.</i>
WILLIAM G. SPILLER, M.D.....	<i>Professor of Neuropathology and Associate Professor of Neurology.</i>
JAMES W. McCONNELL, M.D.....	<i>Associate in Neurology.</i>
ALFRED R. ALLEN, M.D.....	<i>Associate in Neurology and In- structor in Neuropathology.</i>
S. D. LUDLUM, M.D.....	<i>Associate in Neurology and In- structor in Neuropathology.</i>
SAMUEL LEOPOLD, M.D.....	<i>Instructor in Neurology and As- sistant in Neuropathology.</i>
N. S. YAWGER, M.D.....	<i>Instructor in Neurology.</i>
WILLIAMS B. CADWALADER, M.D.....	<i>Instructor in Neurology and As- sistant in Neuropathology.</i>
EDWARD M. WILLIAMS, M.D.....	<i>Assistant in Neuropathology.</i>

I. CLINICAL LECTURES. *Professors Mills and Spiller.*—One clinical lecture a week is given to the fourth-year students at the University Hospital throughout the entire year, during the first half of the session by Professor Mills, and during the second half by Professor Spiller.

II. CLINICAL LECTURES (*Continued*). One lecture a week is also given to the fourth-year class during the first half of the session at the Philadelphia General Hospital. An effort is made to systematize the teaching, especially at the Philadelphia General Hospital, where the large amount of material always at command enables the teacher to select and arrange beforehand the subjects to be discussed.

III. WARD CLASS INSTRUCTION. *Dr. McConnell, Dr. Ludlum and other Instructors.*—This instruction is given during one-half of the year, both in the University and in the Philadelphia General Hospital. The class is divided into small sections, so as to give each student the opportunity of personally investigating the cases under the supervision of the instructors.

IV. WARD WORK. Ward work in neurology, similar to that described under instruction in medicine for the fourth year, is given in the University Hospital by Dr. Leopold, Dr. Yawger and Dr. Cadwalader under the supervision of the professors and associates in neurology. This ward work is in addition to the ward classes above described.

V. INSTRUCTION IN OUT-PATIENT DEPARTMENT. *Dr. McConnell, Dr. Allen and other Instructors.*—In connection with the teaching given in the wards of the University and Philadelphia General Hospitals, advantage is taken of the large outdoor neurological

service, sections being instructed in the dispensary at times previously arranged. In this way the students are brought in contact with nervous diseases in their earlier as well as in their later manifestations. The methods of studying, recording and treating cases are taught. Lectures and demonstrations in electrotherapeutics are given by Dr. S. Leopold. The electromedical apparatus used in the outdoor service is of the most modern type, including static, galvanic and faradic instruments. Instruction is given in the use of all the methods now employed in the treatment of diseases of the nervous system.

VI. NEUROPATHOLOGY. *Professor Spiller, assisted by Dr. Allen, Dr. Ludlum, Dr. Leopold, Dr. Cadwalader and Dr. Williams.*—One hour and a half a week to each member of the third-year class, during October and November. The course is open also to post-graduate students. The work is in part clinical. The students are shown various gross pathological specimens, and are taught the signs and symptoms caused by the lesions represented by these specimens. In this way they receive much instruction in the physiology as well as the pathology of the nervous system. Where considered desirable, the clinical history of the case illustrated is given. The students are taught the practical application of their knowledge of anatomy and physiology and are prepared for their fourth year clinical work in neurology. Microscopical sections illustrating many pathological conditions are demonstrated by the lantern to the entire class one hour each week during December and January, so that the students are enabled to study the more minute morbid changes occurring in diseases of the nervous system, and to understand the symptoms produced by them. The technique employed in investigation is also taught so far as possible, so as to include the methods of imbedding, cutting, staining, etc., employed in this branch of medicine. The students are in this way prepared to conduct original investigations in the pathology of the nervous system after their graduation, if they so desire. Instruction is also given in the methods of preparation of the brain and cord for gross examination, so that the nervous tissues may not be injured for microscopical study.

MENTAL DISEASES.

CHARLES W. BURR, M.D.....*Professor of Mental Diseases.*

All instruction in Mental Diseases is given in the Philadelphia General Hospital. Throughout the year one hour each week is given the third-year class. The first five lectures are systematic, dealing

with the aetiology and general symptomatology of such affections, all the remainder being clinical lectures. In the fourth year each student attends not less than ten ward class periods, in each of which he examines the patient himself, reporting his findings and diagnoses to the professor for criticism. Especially in these latter exercises he obtains an insight into the general workings of asylum management.

LARYNGOLOGY AND RHINOLOGY.

CHARLES P. GRAYSON, M.D.....*Clinical Professor of Laryngology and Rhinology.*

WALTER S. HARGETT, M.D.....*Instructor in Laryngology.*

D. N. HUSIK, M.D.....*Assistant Instructor in Laryngology.*

I. LECTURES AND CLINICS. *Professor Grayson.*—From January to May there is a course of weekly lectures given to the third-year class, covering the anatomy and physiology of the upper air and digestive tracts, these being illustrated by drawings and by dry and wet preparations. The diseases of the nose and its accessory cavities, of the pharynx, the fauces and the larynx, are systematically studied; and in connection with their causation and treatment, emphasis is laid upon the pathologic and therapeutic importance of the systemic conditions with which they are often associated. The surgery of these special regions is also thoroughly demonstrated during the course by a series of clinics.

II. PRACTICAL WORK IN OUT-PATIENT DEPARTMENT. *Professor Grayson and assistants.*—Throughout equal periods of the session the fourth-year class attends this course, divided into sections of such size that each student receives an abundance of practical work under the personal supervision of Dr. Grayson and his assistants. The very large service of this dispensary provides ample material for the members of the class to acquire proficiency in the use of the various instruments of examination and treatment, and to become expert in the diagnosis and treatment of the diseases that are more often encountered in general practice.

OTOLOGY.

B. ALEXANDER RANDALL, M.D.....*Clinical Professor of Otology.*

RALPH BUTLER, M.D.....*Instructor in Otology.*

BENJAMIN D. PARISH, M.D.....*Assistant Instructor in Otology.*

I. LECTURES. *Professor Randall.*—The instruction in the second half of the third year consists of a course of lectures, partly clinical, but with abundant illustrations by anatomical and pathological preparations, models, charts and the stereopticon. Operations for diseases of the mastoid and lateral sinus and abscess of the brain are demonstrated on the cadaver, if not upon patients.

II. PRACTICAL WORK. *Professor Randall and Dr. Butler.*—Practical work is given to the fourth-year class in subsections of ten or less, in the newly equipped Out-Patient Department or wards of the University Hospital. Individual instruction is given by the dispensary staff in the examination, recording and treatment of patients, the work being delegated to the students so far as they may show themselves competent. All are thus drilled in the use of the head-mirror, in rhinoscopy and Eustachian catheterization, as well as in simpler measures. In mastoid and other operations selected students assist or operate under strict supervision, and follow the cases in the later dressings. Stress is laid throughout upon simplicity in the essential methods of diagnosis and treatment, with minute and conscientious care in application.

FIRST-YEAR CLASS, 1911-1912.

ORDER OF INSTRUCTION, DAILY, BEFORE FEB. 1.

<i>Hours.</i>	<i>Monday.</i>	<i>Tuesday.</i>	<i>Wednesday.</i>	<i>Thursday.</i>	<i>Friday.</i>	<i>Saturday.</i>
9 A. M.	Cornell. Osteology.	Taylor. Physiological Chemistry.	Taylor. Physiological Chemistry.	Taylor. Physiological Chemistry.	Abbott. Bacteriology.	
10 A. M.	Laboratory of Physiological Chemistry.	Laboratory of Physiological Chemistry.	Laboratory of Histology and Embryology.	Laboratory of Physiological Chemistry.	Laboratory of Physiological Chemistry.	Laboratory Histology and Embryology.
11 A. M.						
12 M.						
1 P. M.						
2 P. M.	Osteology and Dissection.	Osteology and Dissection.	Osteology and Dissection.	Osteology and Dissection.	Osteology and Dissection.	
3 P. M.						
4 P. M.	Piersol. Anatomy.	Piersol. Anatomy.	Piersol. Anatomy.	Taylor. Physiological Chemistry.	Taylor. Physiological Chemistry.	
5 P. M.		Gymnasium.			Gymnasium.	

For the first period of 48 working days the class will work in the period from 1.30 to P. M., in the Osteological Laboratory daily; thereafter in the same hours in the Dissecting Room.

First Period from October 2 to November 25—48 working days.

Second Period from November 27 to January 27—42 working days.

FIRST-YEAR CLASS, 1911-1912.

ORDER OF INSTRUCTION, DAILY, AFTER FEB. 1.

<i>ours.</i>	<i>Monday.</i>	<i>Tuesday.</i>	<i>Wednesday.</i>	<i>Thursday.</i>	<i>Friday.</i>	<i>Saturday.</i>
A. M.						
A. M.	Bacteriological Laboratory.	Bacteriological Laboratory.	Laboratory of Histology and Embryology.	Bacteriological Laboratory.	Bacteriological Laboratory.	Laboratory of Histology and Embryology.
A. M.						
P. M.						
P. M.						
P. M.	Dissection.	Dissection.	Dissection.	Dissection.	Dissection.	
P. M.						
P. M.	Piersol. Anatomy.	Piersol. Anatomy.	Piersol. Anatomy.	Eliason. Emergency Treatment.	Stevens. Medical Terminology.	
P. M.		Gymnasium.			Gymnasium.	

SECOND-YEAR CLASS, 1911-1912.

ORDER OF INSTRUCTION, DAILY, BEFORE FEB. 1.

<i>Hours.</i>	<i>Monday.</i>	<i>Tuesday.</i>	<i>Wednesday.</i>	<i>Thursday.</i>	<i>Friday.</i>	<i>Saturday.</i>
9 A. M.						
10 A. M.	Pathological Laboratory.	Pathological Laboratory.	Physiological Laboratory.	Physiological Laboratory.	Pathological Laboratory.	Physiological Laboratory.
11 A. M.						
12 M.	Richards. Pharmacology.	Smith. Pathology.	Smith. Pathology.	Richards. Pharmacology.	Smith. Pathology.	Pharmacological Conference. Section B.
1 P. M.						
2 P. M.	First Period. Dissection.	First Period. Dissection.	First Period. Dissection.	First Period. Dissection.		
3 P. M.	Second Period. Pharmacological Laboratory. Section A.	Second Period. Pharmacological Laboratory. Section B.	Second Period. Pharmacological Laboratory. Section A.	Second Period. Pharmacological Laboratory. Section B.	First Period. Dissection.	
4 P. M.	Reichert. Physiology.	Reichert. Physiology.	Pharmacological Conference. Section A.	Reichert. Physiology.	Reichert. Physiology.	
5 P. M.	McKenzie. Physical Therapy.		McKenzie. Physical Therapy.			

The class is divided into two sections, A and B, for work in the Laboratory of Pharmacology and for Pharmacological Conferences; elsewhere the entire class is accommodated at each period scheduled.

First Period from October 2 to November 25—48 working days.

Second Period from November 27 to January 27—42 working days.

SECOND-YEAR CLASS, 1911-1912.

ORDER OF INSTRUCTION, DAILY, AFTER FEB. 1.

<i>ours.</i>	<i>Monday.</i>	<i>Tuesday.</i>	<i>Wednesday.</i>	<i>Thursday.</i>	<i>Friday.</i>	<i>Saturday.</i>
A. M.						
A. M.	Pathological Laboratory.	Pathological Laboratory.	Physiological Laboratory.	Physiological Laboratory.	Pathological Laboratory.	Physiological Laboratory.
A. M.						
	Norris. Physical Diagnosis.	Smith. Pathology.	Smith. Pathology.	Richards. Pharmacology.	Smith. Pathology.	Richards. Pharmacology.
2 M.						
P. M.						
P. M.	Pharmacological Laboratory. Section A.	Toxicology, Laboratory.	Pharmacological Laboratory. Section B.	Thomas. Applied Anatomy.	Thomas. Applied Anatomy.	
P. M.	Physical Diagnosis. Section B.		Physical Diagnosis. Section A.	Marshall. Toxicology.	Pharmacological Conference. Section B. Whiting. Bandaging. Section A.	
P. M.	Reichert. Physiology.	Reichert. Physiology.	Pharmacological Conference. Section A. Whiting. Bandaging. Section B.	Reichert. Physiology.	Reichert. Physiology.	
P. M.	McKenzie. Physical Therapy.		McKenzie. Physical Therapy.			

ORDER OF INSTRUCTION, DAILY.—THIRD YEAR CLASS.—1911-1912.

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SCHOOL OF MEDICINE

HOUR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 A. M.	JOPSON. Surgical Operative Technique. NEILSON (after Feb. 1).	BURR. Mental Diseases.	Demonstrations in Neuropathology (before Dec. 1). Practical Therapeutics (after Dec. 1). Gross Morbid Anatomy.	Demonstrations in Neuropathology (before Dec. 1). Practical Therapeutics (after Dec. 1). Gross Morbid Anatomy.	PEPPER. Clinical Pathology.	ELIASON. Surgery.
10 A. M.	MÜLLER. Surgery.	HARTZELL. Dermatology (before Feb. 1). SAILER. Clinical Medicine (after Feb. 1).			GRIFFITH. Pediatrics.	Clinics. Philadelphia and Pennsylvania Hospitals.
11 A. M.	SMITH. Pathology.	ROSS. Clinical Surgery.	A. C. WOOD. Minor Surgery.	SMITH. Pathology.	STEVENS. Medical Observation (before Feb. 1). RIESMAN. Clinical Medicine (after Feb. 1).	
12 M.	MARTIN. Surgery.	SPILLER. (Before Feb. 1). HARTZELL. Dermatological Clinic (after Feb. 1).	CARNETT. Clinical Surgery.	MARTIN. Surgery.	MÜLLER. Clinical Surgery (before Feb. 1). STAHL. Dietetics of Sick (after Feb. 1).	
1 P. M.						
2 P. M.	Medical Dispensary, Section A. Clinical Pathological Laboratory, Section B.	Med. Ward, Class, Section A. Medical Dispensary, Section B. Clinical Pathological Laboratory, Section C.	FUSSELL. Applied Therapeutics.	Med. Ward, Class, Section B. Clinical Pathological Laboratory, Section A.	FUSSELL. Applied Therapeutics.	
3 P. M.		Ward Class, Ophthalmology, Section A.	DE SCHWEINITZ. Ophthalmology (before Feb. 1). GRAYSON. Laryngology (after Feb. 1).	Ward Class, Ophthalmology, Section B.	DE SCHWEINITZ. Ophthalmology (before Feb. 1). RANDALL. Otolaryngology (after Feb. 1).	
4 P. M.	STENGEL. Medicine	HIRST. Obstetrics	CLARK. Lantern Demonstration	HIRST. Obstetrics	STENGEL. Medicine	

SESSION 1911-1912.

Schedule of Practical Instruction for Third-Year Class.

For practical instruction in Neuro-pathology, Practical Therapeutics and Gross Morbid Anatomy, class is divided into two sections, numbered 1 and 2; for practical work in all other subjects the class is divided into three sections (A, B and C) each of which is subdivided into four subsections (as A¹, A², A³, A⁴) for ward classes in Medicine.

	Mon.	Tues.	Wed.	Thurs.	Fri.
Neuro-pathology.....	—	—	1	2	—
Gross Morbid Anatomy.....	—	—	2	1	—
Practical Therapeutics.....	—	—	1	2	—
Medical Ward Class.....	C	A	—	B	—
Ophthalmological Ward Class	C	A	—	B	—

SUBSECTIONS OF WARD CLASS IN MEDICINE AND MEDICAL DISPENSARY.

Medical Dispensary, 2-4 P. M.; Ward Class, Philadelphia Hospital, 2 P. M.

		Oct. 2 to Nov. 25.			Nov. 27 to Feb. 3.			Feb. 5 to Mar. 30.			Apr. 1 to June 1.		
		Mon.	Tues.	Thur.	Mon.	Tues.	Thur.	Mon.	Tues.	Thur.	Mon.	Tues.	Thur.
Inla. sp.	DR. TORREY.....	A ¹	B ¹	C ¹	A ²	B ²	C ²	A ³	B ³	C ³	A ⁴	B ⁴	C ⁴
	DR. GOODMAN....	A ²	B ²	C ²	A ³	B ³	C ³	A ⁴	B ⁴	C ⁴	A ¹	B ¹	C ¹
	DR. PIERSOL.....	A ³	B ³	C ³	A ⁴	B ⁴	C ⁴	A ¹	B ¹	C ¹	A ²	B ²	C ²
	DR. KLAER.....	A ⁴	B ⁴	C ⁴	A ¹	B ¹	C ¹	A ²	B ²	C ²	A ³	B ³	C ³
	DR. STEVENS } DR. ALLYN } DR. TURNBULL }	C	A	B	C	A	B	C	A	B	C	A	B

ORDER OF INSTRUCTION, DAILY.—FOURTH YEAR CLASS.—1911-1912.

80

SCHOOL OF MEDICINE

HOUR.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 A. M.	CLARK. Operative Gynecology.	Ward Work. Medicine.	CLARK. Operative Gynecology.	Gynecology.	CLARK. Operative Gyne- cology.	FRAZIER. Clinical Surgery.
10 A. M.	Ward Work. Surgery.	Ward Work. Specialties.	Ward Work. Medicine.	Ward Work. Specialties.	Ward Work. Medicine.	Clinics. Philadelphia and Pennsylvania Hospitals.
11 A. M.			Surgery and Hrst. Operative Obstetrics.	Ward Work, Surgery.		
12 M.	MARTIN. Surgery.	Ward Classes. Surgery, two sections. Genito-Urinary Surgery, one section.	Hrst. Operative Obstetrics.	MARTIN. Surgery.	Ward Classes. Surgery, 1 section. Genito- Urinary Surgery, 1 section.	GRIFFITH. Pediatric Clinic.
1 P. M.						
2 P. M.	ABBOTT. Hygiene (before Feb. 1). DAVIS. Orthopedic Surgery (after Feb. 1).	MILLS and SPILLER. Neurological Clinic.	ABBOTT. Hygiene (before Feb. 1). McCARTHY. Medical Jurisprudence, (after Feb. 1).	MUSSEY. Medical Clinic.	MILLS and SPILLER. Neurological Clinic, (before Feb. 1). McCARTHY. Medical Jurisprudence, (after Feb. 1).	
3 P. M.	Ward Classes. See Schedule of Practical Instruction.	Laboratory of Surgical Pathology, Section. Operative Surgery, Laboratory, Section.	Ward Classes. See Schedule of Practical Instruction.	Laboratory of Surgical Pathology, Section.	Ward Classes. See Schedule of Practical Instruction.	
4 P. M.	STENGEL. Medicine.	STENGEL. Clinical Conference.	MUSSEY. Clinical Conference.	Operative Surgery, Laboratory, Section.	STENGEL. Medicine.	
5 P. M.	Operative Obstetrics, Laboratory, Section. Research Medicine, Elective, Section.			DEAVER. Surgical Clinic, German Hospital, Section.	Research Medicine, Elective, Section.	

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SDAY

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Jan. 29 to Mar. 23.	
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43-85	
108-118	
119-128	

Session 1911-1912.

SCHEDULE OF PRACTICAL INSTRUCTION.

Fourth-Year Class.

For practical instruction in all subjects the class is divided into three sections, each of which is divided into subsections and each student is given a number, as 1, 2, etc. Students assigned to instruction in Operative Surgery, to attendance at the Southeastern Dispensary or at the Municipal Hospital, are excused from other work scheduled for the same hours.

Hc. r.	Subject.	MONDAY				TUESDAY				WEDNESDAY				THURSDAY				FRIDAY			
		Oct. 9 to Dec. 22.	Jan. 3 to Mar. 9.	Mar. 11 to May 18.		Oct. 9 to Dec. 22.	Jan. 3 to Mar. 9.	Mar. 11 to May 18.		Oct. 9 to Dec. 22.	Jan. 3 to Mar. 9.	Mar. 11 to May 18.		Oct. 9 to Dec. 22.	Jan. 3 to Mar. 9.	Mar. 11 to May 18.	Oct. 9 to Dec. 22.	Jan. 3 to Mar. 9.	Mar. 11 to May 18.		
11-1 Fri....	Dr. Deaver, Surg. Clinic																				
12-1 TUE. }	U. of Pa. Hospital																				
12-1 FRI. }	Surgery.....					43-128 1-42	1-42 43-85	86-128	1-85 86-128									86-128 43-85 1-42	1-42 86-128 43-85	43-85 86-128	
	Genito-Urinary.....																				
		Oct. 9 to Nov. 25.	Nov. 27 to Jan. 27.	Jan. 29 to Mar. 23.	Mar. 25 to May 18.	Oct. 9 to Nov. 25.	Nov. 27 to Jan. 27.	Jan. 29 to Mar. 23.	Mar. 25 to May 18.	Oct. 9 to Nov. 25.	Nov. 27 to Jan. 27.	Jan. 29 to Mar. 23.	Mar. 25 to May 18.	Oct. 9 to Nov. 25.	Nov. 27 to Jan. 27.	Jan. 29 to Mar. 23.	Mar. 25 to May 18.	Oct. 9 to Nov. 25.	Nov. 27 to Jan. 27.	Jan. 29 to Mar. 23.	Mar. 25 to May 18.
	Neurology.....	1-42	1-42							43-85	43-85							86-128	86-128		
	Mental Diseases.....			1-42	1-42							43-85	43-85								
	Laryngology.....	43-85	54-63	64-74	75-85					86-96	97-107	108-118	119-128					1-10	11-20	21-31	32-42
	Otology.....	54-63	64-74	75-85	86-96					97-107	108-118	119-128	86-96					11-20	21-31	32-42	1-10
3-4	Pediatrics.....	64-85	75-85	86-96	97-107					108-128	119-128	86-96	97-118					21-42	32-42	1-20	11-31
	Orthopedics.....	108-118	119-128	86-96	97-107													64-74	75-85	86-96	97-107
	Medicine.....	119-128	108-118	97-107	86-96					32-42	21-31	11-20	1-10					75-85	86-96	97-107	108-128
		86-107	86-107	108-128	108-128					1-20	1-20	21-42	21-42					43-63	43-63	64-85	64-85
5-6	Obstetrics.....	86-128	1-42	43-85																	

SUBSECTION SCHEDULE FOR WARD WORK IN SPECIALTIES.

First Period, October 9 to December 22.

Subject.	Oct. 9 to Oct. 19.	Oct. 20 to Oct. 31.	Nov. 1 to Nov. 11.	Nov. 13 to Nov. 23.	Nov. 24 to Dec. 9.	Dec. 11 to Dec. 22.
Obstetrics	64-71	79-85	72-78	43-49	57-63	50-56
Dermatology (Philadelphia Hospital)	72-78	64-71	79-85	50-56	43-49	57-63
Venereal (Philadelphia Hospital)	79-85	72-78	64-71	57-63	50-56	43-49

Second Period, January 3 to March 9.

Subject.	Jan. 3 to Jan. 13.	Jan. 15 to Jan. 24.	Jan. 25 to Feb. 3.	Feb. 5 to Feb. 15.	Feb. 16 to Feb. 27.	Feb. 28 to Mar. 9.
Obstetrics	108-114	122-128	115-121	86-93	101-107	94-100
Dermatology (Philadelphia Hospital)	115-121	108-114	122-128	94-100	86-93	101-107
Venereal (Philadelphia Hospital)	122-128	115-121	108-114	101-107	94-100	86-93

Third Period, March 11 to May 18.

Subject.	Mar. 11 to Mar. 20.	Mar. 21 to Mar. 30.	Apr. 1 to Apr. 13.	Apr. 15 to Apr. 25.	Apr. 26 to May 7.	May 8 to May 18.
Obstetrics	22-28	36-42	29-35	1-7	15-21	8-14
Dermatology (Philadelphia Hospital)	29-35	22-28	36-42	8-14	1-7	15-21
Venereal (Philadelphia Hospital)	36-42	29-35	22-28	15-21	8-14	1-7

WARD WORK.

Oct. 9 to Dec. 22.				Jan. 3 to Mar. 9.				Mar. 11 to May 18.			
Medical Wards University Hospital	1-42	Oct. 9 to Nov. 11, Nov. 13 to Dec. 22,	1-21 22-42	43-85	Jan. 3 to Feb. 3, Feb. 5 to Mar. 9,	43-63 64-85	86-128	Mar. 11 to Apr. 13, Apr. 15 to May 18,	86-107 108-128		
Medical Wards Blockley Hospital		Oct. 9 to Nov. 11, Nov. 13 to Dec. 22,	22-42 1-21		Jan. 3 to Feb. 3, Feb. 5 to Mar. 9,	64-85 43-63		Mar. 11 to Apr. 13, Apr. 15 to May 18,	108-128 86-107		
Surgical Wards University Hospital		86-128			1-42			43-85			
Phipps Institute and Specialties	43-85	Oct. 9 to Nov. 11, Nov. 13 to Dec. 22,	43-63 64-85	86-128	Jan. 3 to Feb. 3, Feb. 5 to Mar. 9,	86-107 108-128	1-42	Mar. 11 to Apr. 13, Apr. 15 to May 18,	1-21 22-42		
		Oct. 9 to Nov. 11, Nov. 13 to Dec. 22,	64-85 43-63		Jan. 3 to Feb. 3, Feb. 5 to Mar. 9,	108-128 86-107		Mar. 11 to Apr. 13, Apr. 15 to May 18,	22-42 1-21		

The section scheduled for Phipps Institute will go to the Tuberculosis Wards, Philadelphia Hospital, every Tuesday, 10-12.

SUBSECTIONS OF WARD CLASS IN MEDICINE.—3 P. M.

	Oct. 9 to Nov. 25.			Nov. 27 to Jan. 27.			Jan. 29 to Mar. 23.			Mar. 25 to May 18.		
	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
DR. SAILER	86-96	1-10	43-52	97-107	11-20	53-63	108-117	21-31	64-74	118-128	32-42	75-85
DR. RIESMAN	97-107	11-20	53-63	86-96	1-10	43-52	118-128	32-42	75-85	108-117	21-31	64-74

SUBSECTIONS OF WARD CLASS IN NEUROLOGY.—3 P. M.

	Oct. 9 to Nov. 11.			Nov. 13 to Dec. 16.			Dec. 18 to Jan. 27.		
	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
DR. ALLEN, UNIVERSITY HOSPITAL	1-14	43-56	86-99	15-28	57-70	100-113	29-42	71-85	114-128
DR. McCONNELL, PHILADELPHIA HOSPITAL	15-28	57-70	100-113	29-42	71-85	114-128	1-14	43-56	86-99
DR. LUNLUM, PHILADELPHIA HOSPITAL	29-42	71-85	114-128	1-14	43-56	86-99	15-28	57-70	100-113

SUBSECTIONS OF WARD CLASS IN PEDIATRICS.—3 P. M.

	Oct. 9 to Oct. 28.			Oct. 30 to Nov. 11.			Nov. 13 to Nov. 25.			Nov. 27 to Dec. 16.			Dec. 18 to Jan. 13.			Jan. 15 to Jan. 27.			Jan. 29 to Feb. 10.			Feb. 12 to Mar. 2.			Mar. 4 to Mar. 23.			Mar. 25 to Apr. 13.			Apr. 15 to Apr. 27.			Apr. 29 to May 18.		
	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
CHILDREN'S HOSPITAL	75-85	108-118	32-42	108-118	21-31	64-74	64-74	119-128	21-31	43-53	119-128	1-10	119-128	32-42	32-42	75-85	86-96	75-85	54-63	86-96	11-20	43-53	96-107	1-10	86-96	1-10	43-53	64-74	97-107	21-31	54-63	108-118	11-20	97-107	11-20	54-63
UNIVERSITY HOSPITAL	108-118	21-31	64-74	64-74	119-128	21-31	75-85	108-118	32-42	119-128	32-42	75-85	75-85	86-96	1-10	43-53	119-128	32-42	86-96	1-10	43-53	54-63	86-96	11-20	43-53	97-107	1-10	97-107	11-20	54-63	64-74	97-107	21-31	54-63	108-118	11-20
PHILADELPHIA HOSPITAL	64-74	119-128	21-31	75-85	108-118	32-42	108-118	21-31	64-74	75-85	86-96	32-42	43-53	119-128	75-85	119-128	32-42	1-10	43-53	97-107	1-10	86-96	1-10	43-53	54-63	86-96	11-20	54-63	108-118	11-20	97-107	11-20	54-63	64-74	97-107	21-31

TEXT-BOOKS.

Text-Books

Anatomy: Piersol's Text-book of Anatomy; Piersol's Normal Histology; Cunningham's Practical Anatomy.

Bacteriology: Abbott's Principles of Bacteriology; Harris' edition of Muir and Ritchie's Manual of Bacteriology; Hiss and Zinsser's Text-book of Bacteriology; Park's Pathogenic Bacteria and Protozoa; Lehman and Neumann's Atlas of Bacteriology; Frost and McCampbell's General Bacteriology.

Physiological Chemistry: Bunge's Organic Chemistry for Medical Students; Abderhalden's Text-book of Physiological Chemistry; Lusk's The Science of Nutrition.

Physiology: Howell's, Stewart's, Starling's, or Tigerstedt's Physiology; Krehl's Pathologische Physiologie, or the translation by Hewlett, Krehl's Clinical Pathology.

Pathology: For general use, Stengel's Text-book of Pathology or Adami's General and

Collateral Reading

Cunningham; Gray; Morris; Spalteholz; Sobotta's Histology (edited by Huber); Heisler's Embryology; McMurrich's Embryology.

Enzymes and their Application; Effront; Prescott; Rickett's Infection, Immunity and Serum Therapy; Newman's Bacteriology and The Public Health; Oppenheimer and Mitchell's Toxins and Antitoxins; Wright's Studies in Immunization; Herter's Bacterial Infections of the Digestive Tract; Ehrlich-Bolduan's Studies in Immunity; Bordet-Gay's Studies in Immunity; Vernon's Intra-cellular Enzymes; Oppenheimer and Mitchell's Ferments and their Action.

American Text-book of Physiology; Schäfer's Text-book of Physiology.

Thoma's General Pathology; Ziegler's General and Special Pathological Anatomy; Orth's

Text-Books

Special Pathology; for Aetiology, Roger's Principles of Medical Pathology; for Pathological Anatomy and Histology, Delafield and Prudden; for Pathological Physiology, Krehl's Clinical Pathology and Wells' Chemical Pathology; for Pathological Technology, Mallory and Wright.

Medicine: Tyson's Text-book of Medicine; Musser's Medical Diagnosis.

Surgery: Da Costa's Modern Surgery; American Text-book of Surgery; Bevan's Edition of General Surgery, by Lexer; Mumford's Practice of Surgery; Stewart's Manual of Surgery; Martin's Surgical Diagnosis; Binnie, Manual of Operative Surgery; Bickham's Operative Surgery; Brewer's Text-book of Surgery; Willard's Surgery of Childhood including Orthopædic Surgery; White and Martin, Genito-Urinary and Venereal Diseases.

Obstetrics: Hirst's Text-book of Obstetrics.

Pharmacology: Cushny's Text-book of Pharmacology and Therapeutics.

Collateral Reading

Diagnostik; Orth's Lehrbuch der Speciellen Pathologischen Anatomie; Coplin; McFarland; Beattie and Dixon; Lazarus-Barlow's General Pathology.

Osler's Text-book of Medicine; Osler's Modern Medicine; Albutt and Rolleston's System of Medicine; Grayson's Diseases of Throat, Nose and Ear.

Norris' American Text-book of Obstetrics; Edgar's Obstetrics; Webster's Obstetrics; Williams' Obstetrics.

The United States Pharmacopœia; Wood's Therapeutics; Sollmann's Pharmacology; Dix-

Text-Books

Collateral Reading

Applied Anatomy: Davis' Applied Anatomy; Piersol's Anatomy, Practical Considerations.

Woolsey; Eisendrath; Taylor; Treves; Campbell; Deaver.

Physical Diagnosis: Tyson.

Nervous Diseases: Oppenheim's Diseases of the Nervous System, translated by Alexander Bruce; Pott's Nervous and Mental Diseases; Pott's Electrotherapeutics.

Mill's Diseases of the Brain and Cranial Nerves, with a General Introduction on the Study and Treatment of Nervous Diseases; Dana's Text-book of Nervous Diseases; Church and Peterson's Nervous and Mental Diseases; Starr's Nervous Diseases, Organic and Functional.

Gynecology: Penrose's Text-book of Diseases of Women; Winter's Gynecological Diagnosis.

Kelly's Operative Gynecology; Hirst's Text-book of Gynecology; Ashton's Practice of Gynecology; Montgomery's Text-book of Gynecology.

Pediatrics: Holt; Rotch; Koplik; Carr.

Medical Jurisprudence:

Reese's Medical Jurisprudence; Herold's Legal Medicine. The Law in its Relation to Physicians, by Taylor; Draper's Medical Jurisprudence.

Text-Books

Collateral Reading

Dermatology: Duhring's Cutaneous Medicine, Parts I and II; Stelwagon's Treatise; MacLeod's Handbook of the Pathology of the Skin.

Ophthalmology: de Schweinitz, Diseases of the Eye.

American Text-book of Diseases of the Eye, Ear, Nose and Throat, by de Schweinitz and Randall.

Hygiene: Bergey's Principles of Hygiene; Sedgwick's Hygiene and the Public Health; Flüggé's Grundriss der Hygiene; Notter's Treatise on Hygiene; Abbott's Hygiene of Transmissible Diseases.

Chapin: Municipal Sanitation in the United States; Bashore's Rural Hygiene; Dunbar and Calvert: Principles of Sewage Disposal; Mason's Water Supply; Merriman's Elements of Sanitary Engineering; Rosenau's Disinfection and Disinfectants; Wiley's Foods and their Adulterations; McKenzie's Exercise in Education and Medicine.

Physical Therapy: Wide on Medical and Orthopædic Gymnastics; Graham's Treatise on Massage; McKenzie's Exercise in Education and Medicine.

Medical Dictionary: Gould, Dorland, Cattell or Stedman.

PART IV.

GRADUATE WORK.

GRADUATE WORK.

In addition to the usual accommodations afforded graduates of this and other regular medical schools to attend the laboratory and clinical work of the school, three special provisions for post-graduate work leading to degrees are open to applicants, viz.: a course of instruction in Public Health leading to the degree of D.P.H. (Doctor of Public Hygiene) for graduates in Medicine and the certificate C.S. (Certified Sanitarian), for those not holding the M.D. degree, and, under the rules of the Graduate School of the University of Pennsylvania, the election of certain branches in the School of Medicine in courses leading to the Ph.D. degree.

In addition, the special courses in Tropical Medicine are intended especially for post-graduates, and a limited number of post-graduate students may be accommodated in the work of the Phipps Institute.

1.—COURSES IN PUBLIC HEALTH.

ALEXANDER C. ABBOTT, M.D., Sc.D., D.P.H., Pepper Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene.

WILLIAM EASBY, JR., C.E., Professor of Municipal Engineering.
R. TAIT MCKENZIE, A.B., M.D., Professor of Physical Education and Director of the Department of Physical Education.

LOUIS A. KLEIN, V.M.D., Professor of Pharmacology and Veterinary Hygiene and Dean of the Veterinary School.

DAVID H. BERGEY, A.M., M.D., Assistant Professor of Bacteriology.
THOMAS NOLAN, PH.B., M.S., A.M., Professor of Architectural Construction.

PHILIP P. CALVERT, PH.D., Assistant Professor of Zoölogy.

NATHANIEL GILDERSLEEVE, M.D., Associate in Bacteriology.
M. H. JACOBS, PH.D., Instructor in Zoölogy.

WALTER S. CORNELL, B.S., M.D., Instructor in Osteology, University of Pennsylvania, Director of Medical Inspection in the Public Schools of Philadelphia.

Sanitary Engineering.—Including a consideration of water supplies; Sewerage and sewage disposal; the disposal of municipal refuse and street cleaning.

Sanitary Engineering of Buildings.—Including the principles and practices involved in their heating and ventilation; the various methods of draining and plumbing.

Inspection of Meat, Milk and Other Animal Products.—Comprehending a discussion of the general question of meat inspection, of the diseases of food-producing animals dangerous to man; of milk, particularly of the proper methods of production, preservation and delivering; and of the approved methods for the preservation of all such products.

Practical Methods Used in Sanitary Work; i. e., the practical application of chemical, physical and biological methods to the study of the air, water, soil, food, raiment; the methods for the disposal of refuse; the characteristics of offensive and dangerous trades.

Practical Bacteriology.—Covering the use of apparatus, the methods of cultivating and isolating bacteria; the study of special types of bacteria, particularly those concerned in the causation of disease; a study of disinfectants and methods of practical disinfection; the bacteriological analysis of air, water, soil, foods, etc.

Protozoölogy.—This course includes a general introduction to the structure, physiology, life-histories and classification of the protozoa, with especial reference to those forms which cause disease in man and the lower animals. Attention is paid to the technique of protozoan investigation, the special methods of cultivating, fixing, staining and sectioning the protozoa being considered. An attempt is made in the lectures to point out the most promising fields for future investigation, and facilities are offered (in the laboratory) to those desiring them, to pursue original lines of research.

Arthropods and Disease.—Characters and structures of the arthropods and their subdivisions, with special attention to those forms of arachnids and of insects which as parasites or otherwise attack man and mammals and which carry, or may serve as carriers of disease, or which possess poisonous secretions.

Medical Inspection of Schools.—This instruction is given in a course of lectures on the subject of medical inspection of school children, and the segregation and care of the mentally deficient pupil found in the schools.

Personal Hygiene.—Covering the topics of anthropometry, the use of exercise for correction of defects; the value of exercise in the maintenance of physiological equilibrium.

Vital Statistics.—Statistical methods and the results, with special reference to the population of cities.

Sanitary Legislation.—Comprising a study of the Federal, State and Municipal laws and regulations for safeguarding the public health.

General Hygiene.—Designed to co-ordinate the foregoing topics and to indicate the relation of each and all to the general question of preventive medicine.

This course covers one academic year.

At the termination of the course both theoretical and practical examinations will be held and on all Doctors of Medicine demonstrating fitness, a degree, D.P.H., designating the holder as "Doctor of Public Hygiene," will be conferred. To those participants in such subjects of the course as are not strictly medical and who do not hold the degree of Doctor of Medicine, a certificate designating them as "Certified Sanitarians" will be awarded.

Only persons holding the degree of Doctor of Medicine are eligible to the full course. The fee for the course, including the diploma, is \$150.00. For circular of particulars apply to the

Director of the Laboratory of Hygiene,
University of Pennsylvania.

2.—COURSES IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF PENNSYLVANIA.

Certain branches of instruction in the Medical School have been incorporated in the Graduate School of the University by the Trustees, and may be elected in appropriate groups by eligible individuals for work for the Master's Degree, or that of Ph.D. The possession of a Baccalaureate Degree is required for admission, and the conditions are subject to the rules of the Graduate School of the University of Pennsylvania. For information address Dean of Graduate School of University of Pennsylvania, Philadelphia.

Majors—Anatomy; Physiology; Physiological Chemistry;
Bacteriology; Pathology; Research Medicine;
Pharmacology.

Professor PIERSOL.

1. Anatomy. Taken as a major only by individuals with satisfactory preparation in Human Anatomy or General Anatomy, and offered only for research work upon such anatomical subjects as may be assigned by the Professor of Anatomy after consultation with each student. Hours to be assigned in each case.

General Human Anatomy may be taken as a minor by students approved by the Professor of Anatomy. Hours for lecture and dissection exercises to follow the class work scheduled for the students of the School of Medicine.

Special portions of Human Anatomy as may harmonize with other branches of study (as in the anatomy of the nervous system for students of psychology) may be selected as minors. Hours of instruction to follow the schedule for such subjects in the School of Medicine.

Professor REICHERT.

2. Physiology. Taken as a major only by individuals with satisfactory preparation and offered only for research work upon such physiological topics as may be assigned by the Professor of Physiology after consultation with each student. Hours to be assigned in each case.

Taken as a minor only by students with approved preparation, in appropriate arrangement with other selected branches. Hours of lecture and laboratory exercises as scheduled in the School of Medicine.

Professor TAYLOR.

3. Physiological Chemistry. Taken as a major only by students with approved preparation in General Chemistry and elementary Physiological Chemistry, and offered only for research study upon such topics as may be assigned by the Professor of Physiological Chemistry after consultation with the individual student. Hours to be assigned in each case.

Taken as a minor only by students with approved preparation in General Chemistry, in appropriate arrangement with other selected branches.

Professor ABBOTT.

4. Bacteriology. Taken as a major only by students approved by the Professor of Hygiene and Bacteriology for work in General Bacteriology or for work with the pathogenic organisms. Hours of instruction and laboratory work assigned by the Professor in charge for each individual accepted.

Taken as a minor in connection with other appropriate subjects selected. Hours of instruction and laboratory exercise as scheduled in the School of Medicine.

Professor SMITH.

5. Pathology. General Pathology or special divisions of appropriate dignity may be selected as major subjects only by students with approved preparation; the work in any subject to be conducted with the instruction in the School of Medicine as a basis and advancing into individual research in topics assigned by the Professor of Pathology after consultation with the individual student. Hours of instruction and laboratory work assigned in each case.

As a minor any branch of Pathology may be selected by students with approved preparation, to follow the schedule of lecture and laboratory instruction employed in the School of Medicine. In comparative pathology a course is offered in animal parasitology.

Professor C. W. BURR.

6. Mental Diseases. This course may be taken as a minor by approved students, the work following the scheduled classwork in the School of Medicine. Additional opportunities for diagnosis and observation in the wards of the Insane Department of the Philadelphia Hospital may be granted to special individuals.

Professor W. G. SPILLER.

7. Neuropathology. This course likewise may be elected as a minor, the classwork following the scheduled class hours of the School of Medicine.

Professor R. M. PEARCE.

8. Research Medicine. This subject is open only as a major to students with approved preparation, for research work in those problems of scientific medicine to which can be applied laboratory methods.

Professor A. N. RICHARDS.

9. Pharmacology. Work may be elected as either major or minor in this branch, subject in matter of instruction and hours to the requirements of the student with approval of the professor in charge.

3.—COURSES IN TROPICAL MEDICINE.

Professor A. C. ABBOTT, *Bacteriology, Medical Climatology and Geography, Hygiene of the Tropics and of Ships.*

Dr. M. H. JACOBS.....*Protozoölogy*

Dr. P. P. CALVERT.....*Entomology.*

Professor ALLEN J. SMITH.....*Helminthology and General Medical Zoölogy, and Pathology; Director of the Courses.*

Dr. WILLIAM PEPPER.....*Tropical Medicine.*

Professor G. E. DE SCHWEINITZ.....*Ophthalmology.*

Professor M. B. HARTZELL.....*Dermatology.*

Dr. G. P. MÜLLER.....*Surgical Applications.*

DAMASO RIVAS, M.D., PH.D.....*Assistant Director of Laboratory.*

The University of Pennsylvania in organizing courses of instruction in Tropical Medicine has had in mind not only the need for special opportunity in these lines for practitioners of medicine in the semi-tropical surroundings of our Southern States and outlying territories, but in view of the rapid extension of American commerce into tropical regions realizes the existing and increasing need for medical men with suitable preparation in the extending spheres of American influence in tropical America and the far East. The comparatively large number of students from Central and South America also has appealed to the authorities as a reason for an attempt to more fully deal with the conditions which such a class of students is certain to meet in their homes when engaged in practice.

For these reasons a course of instruction, which it is hoped will eventually develop into the fullest realization of the desires of the University authorities, has been organized. The fundamental features are particularly dwelt upon as the really essential parts of such a special course of instruction. Philadelphia is not so situated geographically and not possessed of such commercial relations that there may be predicted at all times such number and type of clinical subjects as must be desirable for the full illustration of the various affections to be dealt with; yet there are available, now in one, now in another hospital of the city, which has permitted the University to make use of the material for teaching purposes, a very fair number of cases of the more common and important affections dealt with, exclusive of those which by law are not permitted entrance to the city from the ship-quarantine guarding the port. In all other divisions of the course than the exhibition of clinical cases it is hoped that ultimate develop-

ment will leave little to be seriously criticised and much in all of the different lines of instruction which will be found commendable.

It has been determined to offer a course of study extending over a period of fifteen weeks and embracing not less than ten units of work,* at the completion of which period a certificate of attendance is granted, signed by the Provost and Vice-Provost of the University and by the Dean of the Medical School and the Director of the Courses in Tropical Medicine, to all those matriculates who have been in full attendance and who satisfactorily pass examinations in the various branches scheduled for the Courses in Tropical Medicine. To such persons as may have elected individual branches in the course and who satisfy similar requirements for the branch or branches attended, a certificate will be granted for the subject or subjects completed, signed by the Director of the Courses in Tropical Medicine and by the Instructor in the subject in question.

These courses are open to any reputable graduate in Medicine and to students of Medicine who may elect them. The requisite ten units for the certificate may be divided by medical students throughout their period of Medical study, the order of selection to be prescribed by the Dean of the School of Medicine and the Director of the Courses in Tropical Medicine in consultation with the student.

The fee for the full course is \$150.00.

Graduates of this school or students in course are admitted at half rate. Fee for individual branches will be given upon application; but will be based upon the rule of not less than \$15.00 for each unit.

* A unit is constituted by at least two hours of lecture or recitation work each week for the period of fifteen weeks; or by not less than four hours each week of laboratory work, ward work or clinical lectures.

Subject.	No. of Units Allotted.	No. Hrs. Systematic Lectures.	No. Hrs. Clin. Lect. or Lab. Wk.	Lecturer.
Med. Climatology and Geography..	0.5	15	—	Abbott
Hygiene of Tropics and of Ships				
Tropical Medicine....	2.0	30	60	Pepper
Skin Diseases of Tropics.....	0.5	8	15	Hartzell
Eye Diseases of Tropics	0.5	7	15	deSchweinitz
Protozoölogy.....	1.0	15	30	Jacobs
Arthropods and Dis- ease.....	1.0	15	30	Calvert
Helminthology and Gen. Med. Zoölogy.	1.0	15	30	Smith
Pathology of Tropical Diseases.....	2.0	30	60	Smith
Bacteriology of Tropi- cal Diseases.....	1.0	—	60	Abbott
Surgery of Tropical Diseases.....	0.5	7	15	Müller.

For further information address, Director of Courses in Tropical Medicine, School of Medicine, University of Pennsylvania.

4.—THE DEPARTMENT OF RESEARCH MEDICINE.

RICHARD M. PEARCE, M.D.....*Professor of Research Medicine.*
J. HAROLD AUSTIN, M.D.....*Associate in Research Medicine.*

This department, established in 1910 by specific endowment, has for its object the investigation of problems in clinical medicine by means of the fundamental medical sciences. It is equipped in such a way that the methods of chemistry, physiology, pathology, bacteriology and pharmacology may be applied to any clinical problem, with special provisions for distinctly experimental investigation, as well as for observation on patients in the wards of the University

Hospital. Opportunity for investigation will be given to instructors in the clinical departments of the Medical School and to properly prepared practitioners and students. Although essentially a research department, the department will give a limited amount of elective undergraduate instruction in special subjects.

5.—HENRY PHIPPS INSTITUTE.

The Henry Phipps Institute for the Study, Prevention and Treatment of Tuberculosis is intended for the threefold object of research in tuberculosis, of instruction, and as a benefaction to the needy afflicted by tuberculosis. Its research and other activities are in charge of a special directorate (v. p. 101); and under appropriate regulations graduate work in its special lines of operation is afforded properly prepared students of this disease. Its possibilities will be decidedly augmented after the completion of the new building intended for it and now in course of erection. Laboratory facilities, clinical opportunities and study and practice in sociology among the tuberculous are offered. Information may be had by addressing either the Dean of the School of Medicine or the Superintending Director of Phipps Institute.

6.—WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE.

Under appropriate regulations and under approval of the Director of the Laboratory, the facilities of this department (v. p. 99) are extended to graduate students.

REVENUE AND EQUIPMENT

REVENUE AND EQUIPMENT, 1897

The following table shows the revenue and equipment of the State for the year 1897. The total revenue for the year was \$1,000,000. The total equipment for the year was \$500,000. The revenue was divided into three parts: \$300,000 for the State, \$300,000 for the County, and \$400,000 for the City. The equipment was divided into three parts: \$100,000 for the State, \$100,000 for the County, and \$300,000 for the City. The revenue was used for the following purposes: \$200,000 for the State, \$200,000 for the County, and \$400,000 for the City. The equipment was used for the following purposes: \$100,000 for the State, \$100,000 for the County, and \$300,000 for the City.

PART V.

EQUIPMENT AND FACILITIES.

The following table shows the equipment and facilities of the State for the year 1897. The total equipment for the year was \$500,000. The total facilities for the year was \$1,000,000. The equipment was divided into three parts: \$100,000 for the State, \$100,000 for the County, and \$300,000 for the City. The facilities were divided into three parts: \$300,000 for the State, \$300,000 for the County, and \$400,000 for the City. The equipment was used for the following purposes: \$100,000 for the State, \$100,000 for the County, and \$300,000 for the City. The facilities were used for the following purposes: \$300,000 for the State, \$300,000 for the County, and \$400,000 for the City.

BUILDINGS AND EQUIPMENT.

LABORATORIES OF PATHOLOGY, PHYSIOLOGY AND PHARMACOLOGY.

The LABORATORIES OF PATHOLOGY, PHYSIOLOGY and PHARMACOLOGY were formally opened June, 1904. This building is unsurpassed in facilities and equipment for graduate and undergraduate work. The building is two stories in height, above a high basement, and measures 340 feet front by nearly 200 feet in depth. The long front faces north, securing a maximum amount of light for laboratory purposes. All along the front are arranged small rooms for research, rooms for professors and their assistants, libraries, etc., these opening into a private corridor so that those employed in these rooms may be free from interruption by persons passing through the main halls. Perfect lighting of all the laboratories has been obtained through the front or through large courts, which separate the two main parallel groups of rooms.

In the basement of the building the entire north front is occupied by the research laboratories of the department of physiological chemistry; the west wing to the museum of applied anatomy, the laboratories of operative surgery, bandaging and operative obstetrics. In the southern portion are various rooms for prosection and anatomical and pathological preparation; and the large laboratory of pharmacy.

The first floor of the building is devoted to physiology and pharmacology and to the laboratories of research medicine. The portion assigned to the first consists of laboratories for practical instruction, for general research work, for subsection teaching, rooms for the professor and assistants, etc. The section for pharmacology consists of a large general laboratory for teaching practical pharmacology, rooms for original research, etc. An equivalent portion of the southern part of this floor is given over to the laboratories of research medicine. The second floor is devoted mainly to pathology, the entire north front being given over to laboratories for advanced students in pathology, professors' rooms, administrative offices and to the special research and assistants' rooms. The wings accommodate the laboratory of experimental pathology, the museum, the demonstration-rooms and the laboratory of comparative pathology and tropical medicine. The front of the laboratory of normal and pathological histology consists almost entirely of glass and looks north into a spacious court. Another section of this floor, also looking into the court, is subdivided into smaller laboratories for instruction in neuropathology and surgical pathology, and in osteology.

Besides numerous laboratories, research-rooms, etc., there are four lecture-rooms in the building, two of these being demonstration rooms with a seating capacity of 185; the others being lecture-rooms with a seating capacity of 400. The building is entirely fireproof, of the most modern construction, supplied with power, electric light, and many kinds of accessories for promoting the teaching and research work.

LABORATORIES OF CHEMISTRY AND ANATOMY.

The CHEMICAL LABORATORIES occupy the first, second and third floors of the Robert Hare Laboratory building; on the second floor is the laboratory of general chemistry, and on the third floor that of physiological chemistry. In addition to the main rooms, there are smaller rooms, provided with an adequate number of balances for quantitative work, and special rooms set apart for research.

The ANATOMICAL LABORATORY is at the top of the building and is 140 feet in length by 40 feet in width. It is lighted by windows on all sides, and by skylights. The most perfect ventilation is thus secured. There are numerous washstands, with hot and cold water, and private closets for the use of each student. Cleanliness is rigidly enforced. The cadavers furnished the dissecting-room are preserved by refrigeration. Dissection is legalized in Pennsylvania.

LABORATORY OF HYGIENE.

ALEXANDER C. ABBOTT, M.D., *Director.*

The LABORATORY OF HYGIENE was the gift of the late Henry Charles Lea, in 1892, and the equipment was provided through the munificence of the late Henry C. Gibson, of Philadelphia. The building is devoted to graduate and undergraduate work in bacteriology, hygiene and preventive medicine. The student laboratory is a commodious, well-lighted and heated room, with a seating capacity for eighty-three students. Each student is supplied with an individual microscope, and with such apparatus as is necessary to conduct elementary studies in Bacteriology.

NEW CLINICAL LABORATORY.

Several years ago an extension was made to the University Hospital to accommodate the medical dispensaries, medical amphitheatre and clinical conference room, and on the top floor two large laboratories for the teaching of clinical pathology and for the routine laboratory investigation of the hospital cases. The larger room is equipped with desks for the use of the fourth-year students, giving accommodations for 150 men. Each student of the fourth-year class is assigned a desk

and is supplied with an outfit including all the ordinary apparatus required in the examination of blood, urine, stomach contents and other secretions or excretions. He is required to supply himself with a microscope so that he will be enabled to conduct all clinical examinations on cases assigned to him in the hospital wards or elsewhere.

Adjoining the fourth-year laboratory is a smaller room equipped in a similar manner and capable of accommodating fifty students each with a working desk. Members of the third-year class are here instructed in clinical laboratory methods. The class is divided into three sections, each of which is assigned one day per week throughout the year. The course covers completely the important laboratory methods of investigation of blood, urine, stomach contents, pathological exudates, secretions, excretions, etc.

A third room accommodates the Staff Laboratory, where the Pathological Resident of the hospital, under the direction of an Instructor, carries on all the preliminary examinations of materials sent from the wards, makes all blood examinations, Widal tests, etc. Subsequent examinations are made by students of the fourth-year class to whom the cases in the wards are assigned under suitable direction.

WISTAR INSTITUTE OF ANATOMY AND BIOLOGY.

MILTON J. GREENMAN, PH.B., M.D., *Director.*

HENRY H. DONALDSON, PH.D., SC.D., *Professor of Neurology.*

G. CARL HUBER, M.D., *Professor of Embryology.*

SHINKISHI HATAI, PH.D., *Associate in Neurology.*

J. MACPHERSON STOTSENBURG, M.D., *Associate in Anatomy.*

HELEN D. KING, PH.D., *Associate in Anatomy.*

WALDEMAR KOCH, PH.D., *Associate in Biological Chemistry.*

EDWARD B. MEIGS, M.D., *Fellow in Physiology.*

The WISTAR INSTITUTE, incorporated in 1892 by the University of Pennsylvania and General Isaac J. Wistar, is the first American University Institute devoted to advanced study and research in anatomy and biology.

Through the munificence of the late General Isaac J. Wistar the Institute was established and endowed not only for the advancement of research in anatomy, but also for the preservation and increase of the anatomical museum originally known as the Wistar or Wistar and Horner Museum. The original museum founded in 1808 by Professor Casper Wistar was used as a teaching museum for students of medicine in the University of Pennsylvania. Its development along broader lines, since the organization of the Institute, has greatly

increased its scientific value both to the medical students of the University and to biological students throughout the country. It has now become the depository for research materials which are open, under suitable regulations, to the use of capable investigators from all Institutions, and through its Advisory Board it has established itself as a central anatomical institute.

The Museum is open to the public as well as to students daily, except Sundays and Holidays, from 9 A. M. to 4 P. M., Saturdays from 9 A. M. to 12 M.

Well equipped laboratories and a biological library adjoin the museum and every facility is provided here for the work of investigators. The chief resources of the Institute are, at the present time, directed to researches in Comparative Neurology, Comparative Embryology, Biometry and Biological Chemistry. No undergraduate teaching is done in the Institute, but arrangements can be made with the Director whereby advanced students or graduates in medicine may be afforded the facilities for research offered by the Wistar Institute.

The Institute publishes the five principal, independent anatomical journals of the United States, namely: *Journal of Morphology*, *The Journal of Comparative Neurology*, *The American Journal of Anatomy*, *The Anatomical Record*, and *The Journal of Experimental Zoölogy*. In these journals appears a large portion of the anatomical research work done in this country. In addition the Institute also publishes a series known as *Memoirs of the Wistar Institute*, in which appear such monographs as are too extensive to be published in the journals.

WILLIAM PEPPER CLINICAL LABORATORY

HERBERT FOX, M.D., *Director*.

Associates.

SAMUEL S. KNEASS, M.D.,	JOHN W. HUNTER, M.D.,
DANIEL J. MCCARTHY, M.D.,	G. J. SAXON, M.D.,
THOMAS A. COPE, M.D.,	JOHN L. LAIRD, M.D.

Volunteer Associates.

JOSEPH SAILER, M.D.,	G. W. NORRIS, M.D.,
BENJAMIN A. THOMAS, M.D.,	O. H. PERRY PEPPER, M.D.,
JOHN C. GITTINGS, M.D.,	ROBERT H. IVY, M.D.,
WILLIAM PEPPER, M.D.,	A. H. HOPKINS, M.D.,
JOHN SPEESE, M.D.,	H. C. CARPENTER, M.D.,
R. G. TORREY, M.D.	

The WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE, erected through the generosity of the late Dr. William Pepper as a memorial to his father, adjoins the University Hospital. The purposes of the Laboratory are: to promote the interests of the patients by providing facilities for the prosecution of minute clinical studies and original researches; and to advance the interests of science by the publication of the results of such work. No instruction in the Laboratory is given to undergraduates.

The Associates and Volunteer Associates of the Laboratory are appointed for the purpose of carrying out certain lines of investigation for which they have special preparation. The Laboratory does not solicit post-graduate teaching, but has received a limited number of post-graduate students from time to time for the purpose of training them to carry on investigations.

The publications of the Laboratory are issued in the form of contributions, which are the collected reprints of articles issued from the Laboratory and published in various medical journals. One or two numbers, containing from fifteen to twenty or more separate articles, appear each year. A limited number of these may be had by interested persons on application.

The Woodward Fellowship in Physiological Chemistry was founded by George Woodward, M.D., to be filled by election by the Board of Managers of the Hospital of the University of Pennsylvania upon nomination by the Director. The incumbent shall give his full time to work in Physiological Chemistry at the Laboratory and publish only from it, under the Laboratory imprint.

THE UNIVERSITY HOSPITAL.

ROBERT E. HASTINGS, <i>Chairman</i>	} <i>Executive Committee of Board of Managers.</i>
GEORGE H. MCFADDEN.....	
JOHN SAILER.....	
CHARLES W. DULLES, M.D.....	
HENRY S. GROVE.....	
J. WILLIAM WHITE, M.D.....	
THOMAS G. ASHTON, M.D.....	<i>Secretary.</i>

The UNIVERSITY HOSPITAL is situated on the University Campus. It is one of the most important agents in the training of the students, an invaluable adjunct to the School of Medicine, and, together with the Out-Patient Department, furnishes ample provision for the teaching of clinical medicine according to the most approved methods. With

accommodation for 391 patients, it also affords excellent facilities for bedside instruction. Members of the faculty are members of the Hospital Staff.

Six positions as resident physicians in the University Hospital are awarded annually to six members of the Graduating Class of the School of Medicine, selected from the twenty-five members of the class who have the highest general average at the end of the third year of the course.

The MATERNITY PAVILION, with a capacity of 50 beds, comprises a main building, to which the patients are admitted two weeks before delivery, two wings containing delivery rooms, and the ANNA DIKE SCOTT Amphitheatre. This department is under the charge of the Professor of Obstetrics. Under the supervision of the clinical staff, the students assist in cases of labor and make daily visits, during the puerperium, to the mother and child.

THE HENRY PHIPPS INSTITUTE.

UNIVERSITY COMMITTEE ON PHIPPS INSTITUTE.

Provost E. F. SMITH,	Mr. THOMAS ROBINS,
Dr. J. WILLIAM WHITE,	Dr. CHARLES J. HATFIELD,
Mr. ARTHUR L. CHURCH,	Dr. ALFRED STENGEL,
Mr. R. A. F. PENROSE, JR.	Dr. J. H. MUSSER,
Mr. GEORGE E. GORDON,	Dr. A. C. ABBOTT,
Dr. ALLEN J. SMITH.	

ADVISORY COUNCIL.

Dr. SAMUEL G. DIXON, <i>Commissioner of Health of Pennsylvania,</i> <i>ex-officio,</i>	
Dr. JOSEPH S. NEFF, <i>Director, Department Public Health and Charities,</i> <i>Philadelphia, ex-officio,</i>	
Mr. WILLIAM H. BALDWIN, <i>Washington,</i>	
Dr. HERMANN M. BIGGS, <i>New York,</i>	
Dr. LAWRASON BROWN, <i>Saranac Lake,</i>	
Dr. HENRY BAIRD FAVILL, <i>Chicago,</i>	
Dr. SIMON FLEXNER, <i>New York,</i>	
Dr. SAMUEL McCUNE LINDSAY, <i>New York,</i>	
Dr. JAMES ALEXANDER MILLER, <i>New York,</i>	
Dr. JOSEPH H. PRATT, <i>Boston,</i>	
Dr. THEOBALD SMITH, <i>Boston,</i>	
Dr. WILLIAM H. WELCH, <i>Baltimore,</i>	
Dr. H. GIDEON WELLS, <i>Chicago.</i>	

CONSULTING STAFF.

Dr. ALFRED STENGEL, *Consulting Physician*,
 Dr. EDWARD MARTIN, *Consulting Surgeon*,
 Dr. T. B. HOLLOWAY, *Consulting Ophthalmologist*,
 Dr. D. J. MCCARTHY, *Consulting Neurologist*,
 Dr. J. B. CARNETT, *Consulting Surgeon*.

STAFF.

Dr. CHARLES J. HATFIELD, *Executive Director*.

Clinical and Sociological Department.

Dr. H. R. M. LANDIS, *Director*.

Instructors.

Dr. FRANK A. CRAIG, Dr. C. M. MONTGOMERY,
 Dr. JOHN M. CRUCE, Dr. J. T. ULLOM.

Clinical Assistants.

Dr. ISADORE KAUFMAN, Dr. J. D. BLACKWOOD,
 Dr. MAURICE M. JACOB.

Laryngologists.

Dr. GEORGE FETTEROLF, Dr. I. W. BROWN,
 Dr. HENRY J. OFF.

Research Assistant in Sociology.

Miss JANICE S. REED.

Pathological Department.

Dr. PAUL A. LEWIS, *Director*.
 Miss BERTHA I. BARKER, *Research Assistant*.

The Henry Phipps Institute for the study, treatment and prevention of tuberculosis was established in 1903 by Mr. Henry Phipps, of New York, at Third and Pine Streets, Philadelphia, in the building now occupied as temporary quarters. The situation was chosen as being in a section of the city in which tuberculosis was most prevalent, and was made possible by a special law permitting the establishment of the Hospital within the city limits.

In February, 1910, Mr. Phipps transferred the Institute to the

University of Pennsylvania, having previously engaged to erect an appropriate permanent building for its accommodation upon grounds gradually acquired with this in view. By this generous gift to the University this becomes the first fully organized and equipped institution of the kind with University connection. The work of the Institute, until the new building is erected at Seventh and Lombard Streets, will be continued in its present quarters; but an entire reorganization of the plan of work has been undertaken by the University. This contemplates a broadening of its efforts and division of the work into three distinct fields of activity, to be represented by two corresponding departments, the Laboratory or Research Department, and the Clinical Department and Sociological Department, each under its special director. An Advisory Council of twelve members has been selected, composed of the most distinguished men of the country in the lines of work carried on by this Institute, who will visit the Institution at least once each year.

On account of its connection with the University, the Institute will offer facilities for study to the students of the University of Pennsylvania, especially those of the Medical School. Both by visits to the Institution and through the publication of the results of its investigations and research, the Institute will prove valuable both to students and physicians throughout the country interested in this special work.

LIBRARY FACILITIES.

The basis of the Medical Section of the University Library is formed by the Stillé Collection, presented by the late Alfred J. Stillé, to which additions have been made from the William Pepper Medical Foundation established by the late Dr. William Pepper. In addition to purchases, the Medical Section has grown considerably through gifts presented by a number of medical publishers, more particularly Messrs. W. B. Saunders, Lea and Febiger, the J. B. Lippincott Company and P. Blakiston's Son & Co. From most of these are received regularly the new publications issued by them. In addition to these, the University subscribes to about 100 medical periodicals, which represent a choice selection of the leading medical periodicals of this country and Europe. Through special funds the sets of all the more important periodicals and publications of medical societies have been completed.

The PEPPER MEDICAL ALCOVE contains sets of the more important medical periodicals, general reference works covering the various departments of medicine and surgery, text-books, serial publications and all the more important new medical books received at the University.

DEPARTMENTAL LIBRARIES.—A Departmental Library in Physiology has been established, in which are on file all of the important current periodicals on general and special Physiology. Such libraries are accessible to the students under the same rules or regulations as are in effect in the General Library.

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—In addition to the Medical Section of the University Library, students have access to the Library of the College of Physicians, the second largest medical library in the United States.

PART VI.

GENERAL INFORMATION.

GENERAL INFORMATION.

ARRANGEMENT OF SESSION.

The academic year consists of one session, beginning on the last Friday in September, and ending at Commencement on the third Wednesday in June.

TUITION FEES AND EXPENSES.

Under no circumstances are any changes made in the established fees. The only free scholarships granted are those under the regulations hereinafter referred to.

It is expected of every student, either before or by the time of entrance to the second-year class, that he will provide for himself, either by purchase, rental or otherwise, a microscope of a grade suitable for general medical work.

First Year.

Matriculation fee.....	\$5 00
For general tuition ticket, admitting to all the lectures, and including all the laboratory work assigned to this year.....	\$200 00
Use of dissecting material (<i>three parts</i>)	\$1.50 a part.
Gymnasium and Houston Club fee.....	\$10 00

Second Year.

For general tuition ticket, admitting to all the lectures, and including all the laboratory work assigned to this year.....	\$200 00
Use of dissecting material (<i>one part</i>)	\$1.50 a part.
Gymnasium and Houston Club fee.....	\$10 00

Third Year.

For general tuition ticket, admitting to all the lectures and practical courses assigned to this year.....	\$200 00
Gymnasium and Houston Club fee.....	\$10 00

Fourth Year.

For general tuition ticket, admitting to all the lectures and the practical courses assigned to this year (no graduation fee).....	\$200 00
Use of material for operations in surgery (<i>one part</i>).....	\$1.50 a part.
Gymnasium and Houston Club fee.....	\$10 00

FEES FOR SPECIAL COURSES OF THE GENERAL CURRICULUM.

(Students taking special or partial courses, if not already matriculated, or if not graduates of the School, are required to pay the matriculation fee in addition to the fees named below.)

For any single course of lectures.....	\$20 00
For practical course in the Chemical Laboratory.....	25 00
For the course in Practical Gynecology of the fourth year.....	25 00
For any one of the remaining practical courses.....	15 00

For practical courses in special classes a minimum fee of \$25.00 will be charged, this fee increasing in proportion to the material required and special attention demanded in instruction.

Graduates in Medicine of this University are admitted to the courses free of charge; but they are required to pay for any laboratory material which they may use.

Fees for Courses in Public Health and in Tropical Medicine.

General fee for the course in Public Health, including diploma,	\$150 00
For single branch of this course.....	25 00
Regular deposit, to cover breakage, etc., for entire course, or single branch.....	10 00
General fee for course in Tropical Medicine.....	\$150 00
Fee for single branch of this course from.....	\$15 00 upward
Fee for single graduate course in Phipps Institute from..	\$50 00 upward

RULES IN RELATION TO FEES.

All payments should be made to W. O. Miller, Bursar, Room 102, College Hall.

A matriculation fee of \$5.00 must be paid by all new students in the department, whether previously registered in another department or not.

Every student shall upon entering the University make a deposit of \$10.00 to cover loss, damage, or breakage of University property, library fines, or any charge not paid by the student in some other way. A student whose deposit is by charges against it reduced to \$2.50 or less shall be required to pay a sum sufficient to restore the deposit to its original amount. No deposit or balance remaining on a deposit shall be finally repaid to a student until he shall have been graduated or shall have formally withdrawn from the University.

A student who repeats the studies of the year will be required to pay the full tuition fee.

ALLOWANCES IN CASE OF WITHDRAWAL, ETC.

A student who leaves the University within thirty days after the beginning of either the first or second term, and who shall have paid the full term's tuition fees may receive a return of one-half of the tuition fees paid, but in no case shall the matriculation fee be returned.

EXAMINATIONS.

First Year.—The mid-year examination in Anatomy (including Osteology, Syndesmology, Myology, and such other subjects as may have been covered by the lectures on Anatomy before February 1), and examination in Physiological Chemistry are held about February 1.

Final examinations at end of year: Anatomy and Bacteriology.

Second Year.—Examinations in Anatomy, in Physiology, Pathology and Materia Medica will be held about February 1.

Final examinations at the end of the year in Physiology, Applied Anatomy, Pathology, Pharmacology and Physical Diagnosis.

Third Year.—Examination in Ophthalmology will be held about February 1.

Final examinations at end of year: Medicine, Surgery, Obstetrics, Therapeutics and Pathology.

Fourth Year.—Examination in Dermatology will be held about February 1.

Final examinations at end of year: Medicine, Surgery, Obstetrics, Gynecology and Hygiene. The examinations include questions on Diseases of the Ear, Children's Diseases and Neurology, from lists furnished by the Clinical Professors of those branches.

GRADUATION.

At the end of the fourth year a student who has passed all the required examinations satisfactorily will receive the degree of Doctor of Medicine under the following provisions:

1. He must be 21 years of age, and of good moral character.
2. He must have passed satisfactory examinations in all of the required branches of the curriculum, must have attended the practical instruction in all departments, and his last year of instruction must have been at this school.

3. He must have attended at least six cases of Obstetrics.
4. He must be present at Commencement, unless excused by the Dean of the Faculty.

SCHOLARSHIPS.

A competitive examination of candidates to fill three free scholarships is held annually. (In 1912, on Monday, September 23, at 10 A. M. in the New Medical Laboratories),* Each candidate will be required:

First. To satisfy the entrance requirements as stated on pages 347-358.

Second. To furnish satisfactory evidence in writing, from three reputable persons, that he is without means to defray the expenses of a medical education.

Third. To write a brief autobiography of about 300 words in length, which will serve as a test of his qualifications in orthography and grammar. This is to be written on Monday, September 23, at 10 A. M.

Fourth. To undergo examinations in the following subjects:†

1. Any two of the four languages:

- (a) Latin (third book of Horace's *Odes*).
- (b) Greek (first four books of the *Iliad*). The examination will include prosody, syntax and Homeric dialect.
- (c) French.—Elementary French, including grammar, prose composition (Joynes' *Minimum French Grammar and Reader*), and reading at sight in the following books:
Francisque Sarcey, *Le Siège de Paris*.
Beaumarchais, *Le Barbier de Séville*.
Anatole France, *Le Crime de Sylvestre Bonnard*.
- (d) German.—Elementary German, including Learned's *German Grammar*, Wesselhoeft's or Harris' *Prose Composition*, and reading at sight in the following books:
Heine's *Harzreise*.
Eichendorff's *Aus dem Leben eines Taugenichts*.
Wildenbruch's *Das edle Blut*.

2. Physics. (As in Gage's *Principles of Physics*—Goodspeed's *Revision*, Crew's *General Physics*, or Duff's *Text-book of Physics*.)

3. Plane Geometry.

* Two vacancies exist in 1912 in the scholarships of the second-year and third-year classes, and will be filled in the same way and at the same time as here outlined for the scholarships offered to entering students.

† A percentage of not less than 50 must be obtained in each one of the subjects in which a competitor undergoes examination, and an average percentage of at least 70 must be obtained on the whole examination that a competitor may have his name placed upon the eligible list. The appointments will be made from this eligible list.

Fifth. To pay an examination fee of \$5.00, which is not returned, but is accepted as the matriculation fee in case the candidate is successful.

The applications of candidates who propose presenting themselves for examination, together with the certificates demanded by the second requirement of the competition, must be in the hands of the Dean *before September 10*. This requirement having been complied with, candidates will appear without further notice at the time stated for examinations.

PRIZES TO BE AWARDED, JUNE, 1912.

NOTE.—*Theses and Reports in competition for Prizes must be presented to the Dean on or before May 1. Prizes will not be awarded unless the work submitted reaches a high standard of excellence.*

THE ALUMNI MEDAL and a prize of \$50.00 is offered by the Society of the Alumni of the School of Medicine of the University, to the member of the Graduating Class who attains the highest general average in examinations. (Only those members of the Graduating Class who have taken the last three years of the course in Medicine at this University are eligible.)

THE DR. SPENCER MORRIS PRIZE.—The annual income, derived from the investment of Ten Thousand Dollars, will be awarded each year to that Medical Student of the Graduating Class who shall pass the best examination for the degree of Doctor of Medicine.

THE FREDERICK A. PACKARD PRIZE of One Hundred Dollars is offered by a friend of the University to the member of the Graduating Class who has proven himself to be the most proficient in the course in Clinical Medicine.

The Professor of Obstetrics offers a Prize of an obstetrical forceps to the member of the Graduating Class who furnishes the best report of a case of Obstetrics occurring in the University Maternity Hospital.

APPOINTMENTS TO HOSPITAL.

The school strongly advises each graduate to undertake a term of service as interne in some good general hospital. Not less than nine-tenths of the class of 1911 have received appointment by competitive examination or otherwise; and there are each year more demands for graduates of the school for such service than can be accommodated. There is no reason other than the circumstances of the individual why every man after graduation should not gain the experience advised as an interne in one or other hospital of the many advertising upon the bulletin boards of the school.

SOCIETY OF THE ALUMNI OF THE SCHOOL OF MEDICINE.

President.—George A. Piersol, '77.

Vice-Presidents.—Charles W. Burr, '86; John B. Deaver, '78; John K. Mitchell, '83; George W. Guthrie, '73; Edward Jackson, '78; William A. Edwards, '81; Thos. M. T. McKennon, '82.

Historian.—Roland G. Curtin, '66.

Secretary and Treasurer.—Edward A. Shumway, '94.

Executive Committee (for three years).—Wm. J. Taylor, '82; B. Franklin Stahl, '87; Wm. Campbell Posey, '89; William Pepper, '97; S. McC. Hamill, '88; George W. Norris, '99.

Executive Committee (for two years).—James Tyson, '63; George E. deSchweinitz, '81; George C. Stout, '91; J. Gurney Taylor, '95; Charles H. Frazier, '92; Allen J. Smith, '86; Robert L. Pitfield, '92.

Executive Committee (for one year).—Herbert B. Carpenter, '89; J. H. W. Rhein, '90; John G. Clark, '91; C. Y. White, Jr., '95; Wm. S. Wadsworth, '97; Charles K. Mills, '69; G. G. Davis, '79; Arthur H. Gerhard, '11.

This Society was founded in 1870, and is composed of graduates of the School of Medicine in good standing.

The Society is actively engaged in collecting detailed information regarding the Medical Alumni, and is now preparing a matriculate catalogue which will contain the historical data thus acquired. A list of graduates of the Department of Medicine has been published, and can be had on application to the Treasurer at a cost of \$1.50.

A special arrangement has been made with the General Alumni Society whereby *The Alumni Register* has become the official organ of this Society; and a joint annual subscription of \$2 will include membership in both Societies, and one year's subscription to *The Alumni Register*.

Subscriptions should be sent to the Treasurer of the General Alumni Society, 402 Real Estate Trust Building.

**THE PHILADELPHIA ALUMNI SOCIETY OF THE
SCHOOL OF MEDICINE.**

President.—L. H. Adler, Jr., '88.

Honorary Vice-President.—Provost Edgar F. Smith.

Vice-Presidents.—J. Guernsey Taylor, '95; Howard A. Sutton, '98;
John J. Robrecht, '94.

Recording Secretary.—Wm. S. Wray, '94.

Corresponding Secretary.—B. Franklin Stahl, '87.

Treasurer.—Herbert B. Carpenter, '89.

Executive Committee.—Clarence P. Franklin, '93; Daniel M. Hoyt, '01;
George C. Stout, '91; George G. Ross, '91;
Harvey E. Schock, '02.

This Society was founded in the spring of 1892, among the alumni of the Medical Department of the University living in and near Philadelphia. The meetings are held on the third Saturday evenings of February, May and November, and are of a purely social character. The membership is composed of graduates of the School of Medicine. Those desiring to become members are requested to send their names to the Secretary. The dues are two dollars per annum.

DEGREES AND PRIZES, 1911.

At a public Commencement, held Wednesday, June 21, 1911, at the American Academy of Music, the degree of Doctor of Medicine was conferred by Edgar F. Smith, Ph.D., Sc.D., L.H.D., LL.D., Provost, upon the following candidates:

Name.	Post-Office.	State.
Abramovitz, Max.....	Philadelphia.....	Pennsylvania.
Albrecht, Herman Emil.....	Philadelphia.....	Pennsylvania.
Alexander, Robert Julian.....	Salt Lake City.....	Utah.
Andres, John Henry, Jr.....	Bloomsburg.....	Pennsylvania.
Armstrong, James Irons.....	Marshallton.....	Delaware.
Baird, Homer Dale.....	Wilkesburg.....	Pennsylvania.
Baradofsky, Joseph.....	Philadelphia.....	Pennsylvania.
Batdorf, Claude Wellington.....	Harrisburg.....	Pennsylvania.
Bazemore, Bryan Spivey.....	Windsor.....	North Carolina.
Beall, Louis Girardeau.....	Greensboro.....	North Carolina.
Bean, James Robbins.....	Ashbourne.....	Pennsylvania.
Beasley, Edward Bruce.....	Coleraine.....	North Carolina.
Beckwith, Robert Payne.....	Plymouth.....	Pennsylvania.
Berens, Conrad, Jr.....	Philadelphia.....	Pennsylvania.
Birdsall, Joseph Cooper.....	South Starksboro.....	Vermont.
Bixby, Edward Welles.....	Wilkes-Barre.....	Pennsylvania.
Block, Frank Benton.....	Philadelphia.....	Pennsylvania.
Blum, Theodor.....	Vienna.....	Austria.
Boudart, Prosper Joseph, Jr.....	Chester.....	Pennsylvania.
Bowen, Albert.....	Rochester.....	New York.
Bradford, Mark Averill.....	Clairton.....	Pennsylvania.
Brown, Evan Inkerman.....	Buena Vista.....	Pennsylvania.
Buchanan, John Ure, Jr.....	Youngstown.....	Ohio.
Canning, Austin James.....	South Bethlehem.....	Pennsylvania.
Casselman, Arthur Jay.....	Camden.....	New Jersey.
Cater, Charles Columbus, Jr.....	Atlanta.....	Georgia.
Chapman, John Patrick.....	Watertown.....	New York.
Clark, Solon Worth.....	Economy.....	Indiana.
Colver, Benton Noble.....	Battle Creek.....	Michigan.
Crawford, Stanley Ernest.....	Pittsburgh.....	Pennsylvania.
Croll, Walter Lewis.....	Newtown Square.....	Pennsylvania.
Davis, Emmett.....	Glassport.....	Pennsylvania.
Eynon, John Schofield.....	Pittsburgh.....	Pennsylvania.
Ferrier, Paul Alexander.....	Tarkio.....	Missouri.
Festerling, Edwin Garfield.....	Sheboygan.....	Wisconsin.
Flagler, Charles Stewart.....	Stroudsburg.....	Pennsylvania.
Flynn, Charles Watts, Jr.....	Monroe.....	Louisiana.
Flynn, Theobald Mathew M.....	Erie.....	Pennsylvania.

Name.	Post-Office.	State.
Galbreath, John Alexander.....	Lincoln University.....	Pennsylvania.
Gardner, Clifton.....	South Swansea.....	Massachusetts.
Gerhard, Arthur Howell.....	Philadelphia.....	Pennsylvania.
Gindy, Fahmy.....	Assiút.....	Egypt.
Glenn, Robert Alexander.....	Philadelphia.....	Pennsylvania.
Goff, Byron Heazelton.....	Atlantic City.....	New Jersey.
Goldstein, Harry Reuben.....	Pittsburgh.....	Pennsylvania.
Gotwals, John Elmer.....	Yerkes.....	Pennsylvania.
Groblewski, Casimir Charles.....	Plymouth.....	Pennsylvania.
Haines, Wilbur Hamilton.....	Philadelphia.....	Pennsylvania.
Hamrick, Martin Passmore.....	Philadelphia.....	Pennsylvania.
Hardie, Julian Carter.....	Salt Lake City.....	Utah.
Hawk, George William.....	Tower City.....	Pennsylvania.
Hayden, Walter George.....	Pittsburgh.....	Pennsylvania.
Henry, Edward Glenn.....	Tionesta.....	Pennsylvania.
Hess, Ammon Gross.....	Manheim.....	Pennsylvania.
Hess, Elmer.....	Millville.....	New Jersey.
Hess, George Hibbs.....	Uniontown.....	Pennsylvania.
Hickey, Joseph Garrett.....	Philadelphia.....	Pennsylvania.
Hill, Frederick Edgar.....	Trenton.....	New Jersey.
Hoon, LeRoy W.....	Monongahela.....	Pennsylvania.
Howe, Guy Livingston.....	Old Mission.....	Michigan.
Hunter, William Blair.....	Gastonia.....	North Carolina.
Jacocks, William Picard.....	Windsor.....	North Carolina.
John, Rutherford Lewis.....	Media.....	Pennsylvania.
Judd, Eugene Clarence.....	New Hill.....	North Carolina.
Kech, Augustus Sheridan.....	Snow Shoe.....	Pennsylvania.
Kennard, William Sorrento.....	Newark.....	New Jersey.
Kennedy, Foster Harris.....	Williamsport.....	Pennsylvania.
Kerns, Thomas Cleveland.....	Salisbury.....	North Carolina.
Kinloch, Henry Sachtleben.....	Charleston.....	South Carolina.
Kitchen, Philip Gordon.....	Germantown.....	Pennsylvania.
Klotz, Fred Guth.....	Northampton.....	Pennsylvania.
Krebs, Stanley Aaron.....	Mahanoy City.....	Pennsylvania.
Kremer, David Nathaniel.....	Philadelphia.....	Pennsylvania.
Krick, William Fritz.....	Sinking Spring.....	Pennsylvania.
Leavitt, Frederic Headley.....	Trenton.....	New Jersey.
Leech, Archie Wallace.....	New Sheffield.....	Pennsylvania.
Lehmann, John Raymond.....	Springdale.....	Ohio.
Lowry, Walter Thompson.....	Butler.....	Pennsylvania.
McClintock, Andrew Todd.....	Wilkes-Barre.....	Pennsylvania.
McCloskey, Edward William.....	Philadelphia.....	Pennsylvania.
McCormick, Earl V.....	Greensburg.....	Pennsylvania.
McCormick, William Henry, Jr.....	Perth Amboy.....	New Jersey.
McEntee, Bernard Joseph.....	Steelton.....	Pennsylvania.
McHugh, William Aristed, Jr.....	Uniontown.....	Pennsylvania.
McIntire, Benjamin Meredith.....	Philadelphia.....	Pennsylvania.
Macfarlan, Donald.....	Philadelphia.....	Pennsylvania.
Macfarlan, Douglas.....	Philadelphia.....	Pennsylvania.
MacFarland, James, Jr.....	Burlington.....	New Jersey.
Manier, John Owsley.....	Nashville.....	Tennessee.

Name.	Post-Office.	State.
Margolies, Michael.....	West Chester.....	Pennsylvania.
Marks, William LeRoy.....	Callery.....	Pennsylvania.
Meyerhoff, Irwin Silberblatt.....	Coatesville.....	Pennsylvania.
Middleton, William Shainline.....	Norristown.....	Pennsylvania.
Miller, Thomas Grier.....	Statesville.....	North Carolina.
Monahan, John Sylvester.....	Shenandoah.....	Pennsylvania.
Moore, Fontaine Bruce.....	Helena.....	Arkansas.
Mulherin, Francis Xavier.....	Augusta.....	Georgia.
Narr, Frederick Conrad.....	Philadelphia.....	Pennsylvania.
Newmayer, Harry.....	Philadelphia.....	Pennsylvania.
Nicholson, Murdoch Allan.....	Willcox.....	Arizona.
Nunn, Sylvanus James.....	Orange.....	New Jersey.
Nutt, John Budd.....	Williamsport.....	Pennsylvania.
Oast, Samuel Poindexter, Jr.....	Portsmouth.....	Virginia.
Oliensis, Abraham Elijah.....	Philadelphia.....	Pennsylvania.
O'Neil, James William.....	Fall River.....	Massachusetts.
O'Neill, Francis Calistus.....	Wilkes-Barre.....	Pennsylvania.
Parry, John Rogers, Jr.....	Woodsfield.....	Ohio.
Parsons, Isaac Ivison.....	Media.....	Pennsylvania.
Peace, Elber Brodhead.....	Port Norris.....	New Jersey.
Pellett, Thomas Lawrence.....	Hamburg.....	New Jersey.
Pemberton, John deJarnette.....	Raleigh.....	North Carolina.
Pinckney, Frank Huger.....	Philadelphia.....	Pennsylvania.
Piper, Edmund Brown.....	Williamsport.....	Pennsylvania.
Ratliff, Thomas Asbury.....	Dayton.....	Ohio.
Reckord, Frank Frederick Dunott.....	Harrisburg.....	Pennsylvania.
Reeves, John Franklin.....	Bridgeton.....	New Jersey.
Roncovieri, Alfred, Jr.....	San Francisco.....	California.
Root, Aldert Smedes.....	Raleigh.....	North Carolina.
Ross, Albert Howard.....	Battle Creek.....	Michigan.
Ruben, Samuel Abraham.....	Washington.....	Pennsylvania.
Rullman, Walter Ames.....	Annapolis.....	Maryland.
Ryan, William John.....	Philadelphia.....	Pennsylvania.
Sanchez, Julian.....	Camaguey.....	Cuba.
Scanlan, David Ward.....	Atlantic City.....	New Jersey.
Scarlett, Hunter Watt.....	Erie.....	Pennsylvania.
Schnabel, Truman Gross.....	Bethlehem.....	Pennsylvania.
Sloan, Henry Lee.....	Ingold.....	North Carolina.
Smiles, Clyde Jeffrey.....	Pittston.....	Pennsylvania.
Smith, Charles Franklin.....	Schofer.....	Pennsylvania.
Smith, Frederick Ashworth.....	Providence.....	Rhode Island.
Smith, James Augustus.....	Reading.....	Pennsylvania.
Smythe, William Arthur.....	Avoca.....	Pennsylvania.
Spicer, Richard Williams.....	Goldsboro.....	North Carolina.
Steffler, Samuel Sheldon.....	Pittsburgh.....	Pennsylvania.
Stein, Harry Charles.....	Poughkeepsie.....	New York.
Suarez (y Gonzalez) José Manuel.....	Ponce.....	Porto Rico.
Swalm, William Albert.....	Philadelphia.....	Pennsylvania.
Sweeney, Leon Gabriel.....	Wilkes-Barre.....	Pennsylvania.
Terrell, Truman C.....	Ranger.....	Texas.
Thompson, Edward Gilmer.....	Marianna.....	Arkansas.
Throne, James Elwood.....	York.....	Pennsylvania.

Name.	Post-Office.	State.
Tobey, Franklin Joseph.....	Brockton.....	Massachusetts.
Trager, Herman.....	Philadelphia.....	Pennsylvania.
Updegrove, Harvey Claude.....	Easton.....	Pennsylvania.
Webb, Lanphear Wesley, Jr.....	Philadelphia.....	Pennsylvania.
Wilson, George.....	Erie.....	Pennsylvania.
Wilson, Luther Elgin.....	Birmingham.....	Alabama.
Winslow, Harry Charles.....	Bennezzette.....	Pennsylvania.
Yeager, Clark Harvey.....	Plymouth.....	Pennsylvania.
Young, William James.....	Boston.....	Massachusetts.

Nichols, Stanley Hetfield.....Jamaica.....New York.
 (Class of 1910, receiving his
 degree in 1911 on account of
 age).

CERTIFIED SANITARIAN DEGREE.

Name.	Post-Office.	State.
Lyster, William J.....	Washington.....	District of Columbia.
Johnston, John Anderson.....	Trenton.....	New Jersey.

Of the foregoing there were from:

Alabama.....	1	North Carolina.....	12
Arizona.....	1	Ohio.....	4
Arkansas.....	2	Pennsylvania.....	86
California.....	1	Rhode Island.....	1
Delaware.....	1	South Carolina.....	1
District of Columbia.....	1	Tennessee.....	1
Georgia.....	2	Texas.....	1
Indiana.....	1	Utah.....	2
Louisiana.....	1	Vermont.....	1
Maryland.....	1	Virginia.....	1
Massachusetts.....	4	Wisconsin.....	1
Michigan.....	3	Foreign.....	4
Missouri.....	1		
New Jersey.....	14	Total.....	153
New York.....	4		

PRIZES.

THE ALUMNI MEDAL awarded to the member of the Graduating Class who attains the highest general average in examination. To J. O. MANIER.

THE DR. SPENCER MORRIS PRIZE.—The annual income derived from the investment of Ten Thousand Dollars, awarded each year to that Medical Student of the Graduating Class who shall pass the best examination for the degree of Doctor of Medicine. To J. O. MANIER.

The Prize of an Obstetrical Forceps, offered by the Professor of Obstetrics, to the member of the Graduating Class who furnishes the best report of a case in Obstetrics occurring in the University Maternity Hospital. To F. F. D. RECKORD.

THE FREDERICK A. PACKARD PRIZE of One Hundred Dollars, offered by a friend of the University to the member of the Graduating Class who has proven himself to be the most proficient in the course in Clinical Medicine. To E. W. BIXBY.

SCHOOL OF MEDICINE.

POST-GRADUATE STUDENTS.

Name.	Residence.	City Address.
Armitage, H. M., M.D. (Pennsylvania),	Chester,	[533 E. Broad St.]
Campbell, E. A.,	do.	[Chester.]
Greer, Robert B., B.S. (Pennsylvania State), M.D. (Pennsylvania),	Butler,	330 S. 16th St.
Keeney, Bayord G., M.D. (Univ. of Cincinnati),	Shelbyville, Ind.,	3310 Walnut St.
Paul, Thomas M., M.D. (Pennsylvania),	St. Joseph, Mo.,	1420 Christian St.
Shoemaker, Harlan, A.B. (Stanford), M.D. (Pennsylvania),	Shelby, N. C.,	1633 Spruce St.
Stewart, L. F., M.D. (Pennsylvania),	Clearfield,	German Hospital.

FOURTH YEAR CLASS.

Albright, Markley Connel, A.B. (Gettysburg),	Hatfield,	3717 Spruce St.
Alexander, John Harrison,	New Castle,	3733 Spruce St.
Artman, Edward Louis, Jr.,	Philadelphia,	1432 N. 17th St.
Bagenstose, Harry William,	West Leesport,	Dorm. 40 Morris.
Bailey, Harry Francis, B.S. (Bucknell),	Monongahela,	3717 Spruce St.
Barnes, William Henry,	Philadelphia,	[937 Forrester Ave., Darby.]
Bedrossian, Edward Hagop, A.B. (Anatolia College, Marso- van, Turkey),	Marsovan, Turkey,	3267 Sansom St.
Bell, Howard Homer,	Lewistown,	1700 N. 52d St.
Boles, Russell Sage,	Wynnewood,	3400 Walnut St.
Bowman, Paul Newkirk,	Reading,,	Dorm. 122 McKean
Brachman, David Simon,	Philadelphia,	2110 South St.
Bradner, Morris Renfrew,	Warwick, N. Y.,	3601 Locust St.
Bromer, Ralph Shepherd, B.A. (Yale),	Schwenksville,	300 S. 36th St.
Brown, Henry Paul, Jr., B.S. (Pennsylvania),	Germantown,	[128 W. Upsal St.]
Bruce, James White, A.B. (Yale),	Louisville, Ky.,	2601 Lombard St.
Burleigh, Charles Carroll,	Merchantville, N. J.,	Dorm. 14 Rodney.
Cabrera, Esteban Garcia, Jr.,	San Juan, Porto Rico,	Dorm. 26 Coxe.
Carley, Arthur Ward,	Ayer, Mass.,	3745 Spruce St.
Collins, Arthur Aldridge, A.B. (Lincoln),	Oxford,	3265 Sansom St.
Cook, Thomas Wood,	Selma, Ohio,	1700 N. 52d St.
Darrah, Leon Calvin,	Reading,	3609 Locust St.
Denelsbeck, Julius Otis,	Trenton, N. J.,	3265 Woodland Ave.
Desjardins, Arthur Ulderic,	Waterville, Me.,	Hamilton Court.
Dickson, John McCrea, B.S. (Gettysburg),	Gettysburg,	3737 Spruce St.
Diller, Isaac Slaymaker, A.B. (Franklin & Marshall),	Lancaster,	3502 Spring Garden St.
Diven, John, A.B. (Indiana),	Anderson, Ind.,	3601 Locust St.
Doe, Charles Herbert,	Philadelphia,	4509 Sansom St.
Donlan, Francis Albert Bennett,	Shamokin,	3617 Locust St.
Downs, James Tickell, Jr., A.B. (Texas),	Dallas, Texas,	3268 Sansom St.
Draper, Edgar Arthur,	Philadelphia,	2109 Fitzwater St.
Dunn, Archibald Wallace,	Auburn, Me.,	Dorm. 35 Bishop White.
Edwards, Thomson Ford, Jr.,	Philadelphia,	906 S. 47th St.

Name.	Residence.	City Address.
Evans, William Benedict, Farrior, James William, M.E. (Cornell), A. & M. (North Carolina), Fields, Sterling Otelius, Fish, Ezra Simpson, B.S. (California), Gilmore, James Lee, A.B. (Westminster), Godfrey, Rush Clayton, B.S. (Wisconsin), Goldberg, Leo, Graves, Richard Alexander, Groh, John Lick, Halprin, Abram, Hanley, Paul Dawson, Hanson, Edward Kelly, Harmon, Herbert Thurlow, Hawk, David Jackson, B.S. (Bucknell), Helm, John Daniel, A.B. (Franklin & Marshall), Hirsch, Otto Christian, Hoover, Ernest Justin, Hopkinson, Richard Dale, How, Harold Waldron, Howell, Gideon Lyman, Jaspan, Samuel Clemens Keeler, Russell R., Kerr, Harry James, Kessler, John Donovan, Kettner, Clarence Henry, Keyting, Walter Scott, King, Clapham Price, King, Edward Ambrose, A.B. (St. Francis Xavier), Klauder, Joseph Victor, Kleinhans, Paul Howard, Ph.B. (Lafayette), Kroh, Laird Franklin, Ph.B. (Grove City), Larned, Samuel Francis, Lewis, John Francis, Jr., A.B. (St. Joseph), Lick, Maxwell John, A.B. (Allegheny), Llewellyn, Thomas Henry, B.A. (Mt. Allison Univ., Sack- ville, New Brunswick), Loewenthal, Abraham Isador, Lowe, Eugene Clayton, Lupin, Edward Emanuel, B.S. (Pennsylvania), McCain, Gilpin Montith, B.S. (Washington & Jefferson), McCord, Clinton Preston, M.P. (West Chester Norma- School), McGinley, Joseph Leo, McHenry, Robert Newcomb, McNabb, Paul Edgar, Magoffin, Montrose Bovard, A.B. (Princeton), Manzella, Joseph Anthony, Markel, Ralph Montgomery, Ph.B. (Franklin & Marshall), Marks, Philip Edward, A.B. (Washington & Jefferson),	Chester, Kenansville, N. C., Newport News, Va., Los Angeles, Cal., Turtle Creek, Lancaster, Wis. Philadelphia, Presque Isle, Me., Lebanon, Philadelphia, Pottstown, Perth Amboy, N. J., Belfast, Me., Tower City, New Providence, Philadelphia, Altoona, Philadelphia, New York, N. Y., Trucksville, Philadelphia, Harleysville, Homestead, Logan, Ohio, Butler, Salt Lake City, Utah, Annapolis, Md., Scottdale, Philadelphia, Easton, Rural Valley, Syracuse, N. Y., Philadelphia, Albion Paget, W., Bermuda. Philadelphia, Key West, Fla., Philadelphia, Kittanning, Elverson, Wilkes-Barre, Millville, N. J., Knoxville, Tenn., Mercer, Brooklyn, N. Y., Sunbury, Braddock,	[1215 Edgmont Ave.] 3609 Locust St. 17th and Fitzwater Sts. Dorm. 37 Morris. Dorm. 42 Rodney. 3220 Chestnut St. 3419 Walnut St. 3815 Spruce St. 3815 Spruce St. 4906 Lancaster Ave. 3615 Locust St. 3743 Walnut St. 757 Corinthian Ave. 3717 Spruce St. 3733 Spruce St. 3733 Spruce St. Dorm. 334 Franklin. 1424 Spruce St. 3539 Locust St. 3313 Walnut St. 757 S. 5th St. 3703 Walnut St. Dorm. 50 Rodney. 2545 Brown St. Dorm. 43 Rodney. Dorm. 114 Foerderer. Dorm. 451 N. Y. Alumni. 3601 Locust St. 3328 N. Broad St. 3533 Locust St. 3331 Chestnut St. 3815 Spruce St. 4841 Cedar Ave. Dorm. 41 Rodney. 3441 Walnut St. 1207 N. 44th St. 3815 Spruce St. 1247 S. 7th St Dorm. 10 Bishop White. Dorm. 413 Franklin. 03 Walnut St. orm. 38 Morris. Dorm. 501 Baldwin. Dorm. 426 Baldwin. 3419 Walnut St. 3743 Walnut St. Dorm. 201 Brooks.

Name.	Residence.	City Address.
Marshall, Edward Humphrey, Ph.B. (Grove City),	Butler,	3733 Spruce St.
Martin, Sergeant Price,	Chestnut Hill,	Dorm. 201 Brooks.
Mayer, William Henry,	Pittsburgh,	3223 Sansom St.
Monaghan, William Anthony,	Bristol, Conn.,	Dorm. 47 Morris.
Moore, John Walker, B.S. (Davidson),	McConnellsville, S. C.,	3915 Spruce St.
Mumma, Harry Getz,,	Brownstown,	3340 Walnut St.
Murdock, Dennis Ray,	Waynesburg,	Dorm. 39 Morris.
Newcomet, Harry Isaac,	Reading,	Dorm. 30 Provost Tower.
Newsom, Thomas C., B.S. (Mississippi),	Independence, Miss.,	3619 Locust St.
O'Boyle, Cyril Patrick,	Scranton,	Dorm. 53 Coxe.
Pearl, Jacob,	Wissahickon,	[160 Walnut Lane.]
Peters, Charles Orley, A.B. (Allegheny),	Albion,	Dorm. 44 Rodney.
Pike, Charles Edward P.,	Philadelphia,	7242 Woodland Ave.
Pike, Charles Heyfield,	Boston, Mass.	3313 Walnut St.
Presper, Elmer John,	Philadelphia,	2307 Frankford Ave.
Proctor, Jewell Beauchamp, B.S. (Vanderbilt),	Franklin, Ky.,	3729 Locust St.
Reeves, Rufus Sargent, B.S. (Pennsylvania),	Ardmore.	[Ardmore.]
Reymond, Robert Percy, A.B. (Louisiana State),	Baton Rouge, La.,	Dorm. 501 Baldwin.
Rickert, Wilbur Paul,	Harrisburg,	4048 Walnut St.
Rockwell, George Ward, Ph.D. (Pennsylvania), B.S. (Buchtel),	Akron, Ohio,	Dorm. 416 Franklin.
Rosenblum, Alex Morton,	Youngstown, Ohio,	Dorm. 136 Fidler.
Rothrock, Arthur Crawford,	Reedsville,	3703 Walnut St.
Rothschild, Norman Stanley,	Philadelphia,	3323 Walnut St.
Rubin, Harry,	Dunnellon, Fla.,	3323 Walnut St.
Russell, Leslie Crawford,	Saugerties, N. Y.,	Dorm. 11 Wilson.
Ruth, Aaron Leidy,	Conshohocken,	3743 Walnut St.
Schaffner, Gerald Frederic, D.D.S. (Pennsylvania),	Florence, Italy,	3419 Walnut St.
Schildkraut, Jacob Max,	Trenton, N. J.,	3265 Woodland Ave.
Schmitz, Edgar Ferdinand,	St. Louis, Mo.,	Dorm. 226 Baldwin.
Schwartz, Philip Herman,	Hazleton,	3711 Woodland Ave.
Segal, Louis,	Philadelphia,	1807 N. 31st St.
Shookers, Tobias Cletus,	Mountville,	3325 Walnut St.
Simpson, John Christopher,	Philadelphia,	805 N. 11th St.
Simpson, Sumner Clelland,	McKeesport,	3611 Locust St.
Sisney, Thomas LaVere, A.B. (Grove City),	Boyers,	Dorm. 32 Morris.
Smith, Daniel Arthur, Jr., B.S. (Mass. Inst. of Technology),	Newport, R. I.	[1014 King St., Wilmington, Del.]
Smock, Irwin Bradfield,	Philadelphia,	3330 Chestnut St.
Stansfield, Oliver Holt,	Oxford, Mass.,	Dorm. 55 Coxe.
Stevenson, William Wyckoff,	Trenton, N. J.,	Dorm. 21 E. F. Smith.
Strode, George King, B.S. (Haverford),	West Chester,	Dorm. 417 Franklin.
Sweeney, John Francis, Jr.,	Buffalo, N. Y.,	Dorm. 120 McKean.
Thomas, Alfred Robert, Jr.,	Philadelphia,	3411 N. 15th St.
Thomas, David Wesley,	Weedville,	210 S. 36th St.
Tidd, Charles Henry,	Effort,	3703 Walnut St.
Toland, John Hart, A.B. (St. Joseph),	Philadelphia,	2526 S. Broad St.
Vance, Benjamin Morgan, A.B. (Harvard),	Louisville, Ky.,	Dorm. 430 Class of '87.
Vogt, David Mays, B.S. (Albright),	Prescott,	3457 Walnut St.
Wahl, John Carl,	Scranton,	Dorm. 22 Rodney.
Walker, Ralph Ward,	Butler,	Dorm. 20 Rodney.
Walter, Max Johannes,	Breslau, Germany,	1711 Green St.
Wells, James Ralston,	Philadelphia,	754 N. 40th St.

Name.	Residence.	City Address.
Wolferth, Charles Christian, A.B. (Princeton),	Clarksboro, N. J.,	3743 Walnut St.
Zinsser, Harry Frederick, B.S. (Pennsylvania),	Pittsburgh,	3743 Walnut St.

THIRD YEAR CLASS.

Adams, Erick Archibald,	Wilkes-Barre,	Dorm. 450 Lippincott.
Allis, Paul Mitten,	Wyalusing,	Dorm. 21 Rodney.
Armstrong, Thomas Morrell,	Philadelphia,	1430 Christian St.
Bacharach, Daniel,	New York, N. Y.,	3323 Walnut St.
Bailey, Frank Raymond, B.S. (Westminster),	Xenia, Ohio,	Dorm. 40 Rodney.
Ballou, DeForrest, Jr.,	Cynwyd,	[Cynwyd.]
Barnes, Frederick Rigby, Jr.,	Norristown,	4130 Chester Ave.
Barrett, Martin Clement,	Kane,	3733 Spruce St.
Bowman, Foster H.,	Wilkes-Barre,	3743 Walnut St.
Boyd, Samuel Harold, A.B. (Pennsylvania),	Hensel,	Dorm. 424 McKean.
Bramlett, William Parvin, B.S. (Mississippi),	Oxford, Miss.,	3708 Spruce St.
Bransfield, John William,	Portland, Conn.,	3733 Spruce St.
Bridgers, Robert Rufus, A.B. (North Carolina),	Wilmington, N. C.,	3601 Locust St.
Burney, Thomas Morrison,	Los Angeles, Cal.,	Dorm. 15 Morgan.
Buschmann, Trygve Wedege,	Seattle, Wash.,	Dorm. 347 McKean.
Carpenter, James Stratton, Jr., A.B. (Trinity),	Pottsville,	Dorm. 213 Foerderer.
Carskadden, Henry Adam,	Williamsport,	3703 Walnut St.
Ceres, Frederick,	Newark, N. J.,	3815 Spruce St.
Chandler, Swithin,	Wilmington, Del.,	3703 Walnut St.
Cohen, Herman Bernard,	Philadelphia,	5021 Walnut St.
Cox, Ora Howard, B.S. (Whitman),	Machias, Wash.,	3617 Locust St.
Crossan, Edward Thomas,	Wilmington, Del.,	[308 King St.]
Dannenbergh, Arthur Mansbach,	Philadelphia,	1747 N. 33d St.
Davidson, Douglas Treat, A.B. (Yale),	Warren,	4521 Chester Ave.
Day, Elbert Osborne, A.B. (Hamilton),	Red Creek, N. Y.,	2131 Fitzwater St.
Dean, James Philip, B.S. (Wisconsin),	Madison, Wis.,	3706 Walnut St.
Denney, Oswald Evans,	Smyrna, Del.,	S. E. Cor. 35th and Spring Garden Sts.
Dewey, Michael George,	Ashland,	2423 N. College Ave.
Dietrick, Paul Henry,	Kutztown,	14 N. 36th St.
Dobbins, Royal Bolton,	Narberth,	3815 Spruce St.
Doig, Roland Barkley, B.S. (Pennsylvania),	Greenwich, N. Y.,	3733 Spruce St.
Donovan, Cornelius Charles, Jr.,	Scranton,	3733 Spruce St.
Drane, Robert, A.B. (North Carolina),	Edenton, N. C.,	3915 Spruce St.
Drinker, Cecil Kent, B.S. (Haverford),	S. Bethlehem,	126 S. 46th St.
Dunn, William Thomas, B.S. (Pennsylvania State),	State College,	3703 Walnut St.
Ewing, Harvey Milligan, B.S. (Pennsylvania),	Montclair, N. J.,	Dorm. 52 Provost Tower.
Fisher, Fred, Jr.,	Kane,	3940 Pine St.
Gaughan, Robert Aloysius,	Hazleton,	3727 Spruce St.
Harrington, Stuart William,	Du Bois,	3705 Walnut St.
Harris, Tom Ferdinand,	Morris, Minn.,	3743 Walnut St.
Harrison, Francis Grillet,	Philadelphia,	29 N. Farson St.
Heilman, Adam George, Ph.B. (Franklin & Marshall),	Lebanon,	Dorm. 41 Cox.
Hewson, John Percival,	Orange, Tex.,	3815 Spruce St.
Hickman, Harry Chalmers,	Wilmington, Del.	3400 Walnut St.

Name.	Residence.	City Address.
Hupp, John Cox,	Wheeling, W. Va.,	208 S. 36th St.
Jacobosky, Cyrus,	Wilkes-Barre,	3323 Walnut St.
Jacobsen, Rafael, B.S. and L. (Havana Institute),	Havana, Cuba,	Dorm. 40 Morgan.
Jobse, Oliver John, B.S. (Beloit),	Milwaukee, Wis.,	3706 Walnut St.
Johnson, Lloyd W., B.S. (Wisconsin),	Augusta, Wis.,	3706 Walnut St.
Johnston, James Renfrew, Jr., B.S. (Wooster),	Coshocton, Ohio,	Dorm. 226 Baldwin.
Kilduffe, Robert Anthony, 3d, A.B. (St. Joseph),	Philadelphia,	2510 S. Broad St.
Lebkicher, Wellington Alfred,	Reading,	3815 Spruce St.
Leiser, William, 3d, A.B. (Bucknell),	Lewisburg,	Dorm. 307 Brooks.
Lewis, Thomas Krapfel, B.S. (Haverford),	Merchantville, N. J.,	3601 Locust St.
Long, William Samuel, A.B. (Ursinus),	Weatherly,	3703 Walnut St.
Longaker, Edwin Pancoast,	Philadelphia,	1402 N. 16th St.
Lynch, Frank Bruce, Jr.,	do.	426 N. 41st St.
McCarthy, Cornelius Theodore,	do.	6 S. 38th St.
McEvoy, Frank Edward, B.S. (Pennsylvania),	Providence, R. I.,	Dorm. 360 Craig.
McMahon, Francis Bartholomew, B.S. (Wisconsin),	Milwaukee, Wis.,	3706 Walnut St.
McNamee, Edgar Paul,	Butler,	3743 Walnut St.
McNeer, Thomas Theodore,	Dante, Va.,	3733 Spruce St.
Martin, Alexander Tertius, B.S. (Princeton),	Germantown,	[155 W. Walnut Lane.]
Mellon, George Walworth,	Monaca,	3743 Walnut St.
Mercer, Eugene LeRoy,	Mendenhall,	Training House.
Moore, Lawrence Clayton, A.B. (Haverford),	Ercildoun,	3601 Locust St.
Nedurian, Vram Sarkis,	Norwich, N. Y.,	3647 Woodland Ave.
Norris, Scott Allan,	Homestead,	Dorm. 42 Bodine.
O'Brien, Leo Sullivan, A.B. (Rochester),	Rochester, N. Y.,	4304 Sansom St.
Paiva, Benedicto Avila,	Sao Paulo, Brazil,	215 S. 33d St.
Parsons, Percy Paul, A.B. (Allegheny),	New Castle,	3414 Race St.
Prosser, William Oscar Hampton, A.B. (Oregon),	Eugene, Ore.,	3743 Walnut St.
Ramsey, Frank McCracken, B.S. (Haverford),	Sterling, Kan.,	3601 Locust St.
Redmond, John Lawrence,	Corpus Christi, Tex.,	242 S. 44th St.
Reimann, Stanley Philip,	Philadelphia,	945 N. 5th St.
Reiners, Charles Robert,	Huntingdon,	3743 Walnut St.
Robertson, James Farish, Jr., A.B. (Virginia),	Charlotte, N. C.,	3601 Locust St.
Rogers, Lewis Leonidas, Jr.,	Kingston,	3229 Sansom St.
Samuel, Edmund Roger,	Mt. Carmel,	3703 Walnut St.
Sauer, Paul Kurt,	El Paso, Tex.,	3703 Walnut St.
Sawyer, William Alfred, B.S. (Pennsylvania),	Des Moines, Iowa,	257 S. 38th St.
Sheehan, William Coronado,	Chestnut Hill,	3601 Locust St.
Shivers, Charles Hendry de Turck,	Atlantic City, N. J.,	3703 Walnut St.
Silvester, Willis Wilson, Jr.,	Norfolk, Va.,	Dorm. 11 Rodney.
Spahr, Richard Rockafellow,	Mechanicsburg,	3539 Locust St.
Sprowl, Raymond John, A.B. (Wabash College),	Warren, Ind.,	Dorm. 213 Foerderer.
Steenburg, Donald Benjamin, B.S. (Nebraska),	Aurora, Neb.,	3807 Spruce St.
Steinfeld, Edward,	Philadelphia,	2231 N. 33d St.
Summa, Frank Paul,	Kingston,	3611 Locust St.
Sweet, Ralph Lincoln, B.S. (Kansas Wesleyan),	Salina, Kan.,	225 S. 37th St.

Name.	Residence.	City Address.
Taylor, Frederick Raymond, B.S. (Haverford),	Haverford,	Dorm. 115 Foerderer.
Teufel, Walter Casper,	Hazleton,	Dorm. 21 Bodine.
Villalobos, Nilo, B.H. (Liceo de Heredia),	Heredia, Costa Rica,	3714 Locust St.
Weber, John Francis,	Florence, N. J.,	Dorm. 38 Bishop White.
Wells, Frank Happersett, Ph.B. (Lafayette),	Chester Springs,	3703 Walnut St.
Wiant, Meade, B.S. (Grove City),	Rimersburg,	3459 Walnut St.
Work, Philip, B.S. (Pennsylvania),	Pueblo, Col.,	3442 Chestnut St.
Wyatt, Wortham, A.B. (North Carolina),	Wadesboro, N. C.,	3609 Locust St.

SECOND YEAR CLASS.

Andreae, Paul Otto Mahr,	Jersey City, N. J.,	4544 N. 18th St.
Bancroft, John Walter, Ph.B. (Franklin & Marshall),	Altoona,	Dorm. 446 Lippincott.
Bergstein, Alfred Morton,	Pottsville,	27 S. 34th St.
Bernett (y Cordova), Raul, B.Ph. and L. (Univ. Bolivar),	Carthagenia, Colombia,	3419 Walnut St.
Bolivar, Luis Napoleon, B.Ph. and L. (Univ. Bolivar),	S. A., Monpox, Colombia, S. A.,	3719 Spruce St.
Broomall, Harold Shoemaker,	Chester,	[702 Madison St.]
Bump, Merton J.,	Olean, N. Y.,	Dorm. 44 Cox.
Buzby, Benjamin Franklin, A.B. (Pennsylvania),	Swedesboro, N. J.,	Dorm. 11 Bodine.
Callis, Henry Arthur, A.B. (Cornell),	Chicago, Ill.,	103 S. 34th St.
Cannon, Raymond Joseph Aloysius,	Allentown,	2319 N. Howard St.
Carroll, Joseph Peter,	Philadelphia,	1703 N. 15th St.
Chaney, Ralph Hill, A.B. (Oberlin),	Northfield, Minn.,	2601 Lombard St.
Cole, Charles James, Jr., B.A. (Pennsylvania),	Elkins Park.	3537 Locust St.
Conover, John Roy,	Atlantic City, N. J.,	Dorm. 33 Bishop White.
Donnelly, John Devlin, A.B. (La Salle),	Philadelphia,	Old York Rd. and 69th Ave.
Dreifus, Percy,	Lititz,	417 S. 16th St.
Entwisle, Robert Morgan, B.S. (Princeton),	Johnstown,	Dorm. 42 Birthday.
Frank, Louis Wallace, A.B. (Center College, Danville, Ky.),	Louisville, Ky.,	Dorm. 316 Leidy.
Fussell, George Dock, B.A. (Swarthmore),	Roxborough,	[421 Lyceum Ave.]
Galey, Harry Charles, Jr.,	Philadelphia,	4544 N. 18th St.
Green, Henry Larkin, B.S. (Louisiana),	Oakland, La.,	3815 Spruce St.
Higgs, Charles J.,	Wilkes-Barre,	3733 Spruce St.
Howell, William Horace,	Morrisville,	[Morrisville.]
Immerman, Samuel Leon,	Philadelphia,	714 Dickinson St.
Jalbuena (y Benedicto), Jose, A.B. (Ateneo de Manila),	Jaro, Iloilo, P. I.,	7104 Woodland Ave.
Keller, Joseph Charles, B.A. (St. Mary, Belmont, N. C.),	Germantown,	[3709 Germantown Ave.]
Kendall, Raymond Miner, Ph.B. (Bucknell),	Waterford,	214 S. 37th St.
Kern, Richard Arminius, A.B. (Pennsylvania),	Taborton, N. Y.,	3733 Spruce St.
Kleckner, Martin Selser, B.S. (Muhlenberg),	Allentown,	Dorm. 433 Class of '87.
Kraemer, Harry Michael,	Scranton,	3449 Woodland Ave.
Krug, Bernard McDowell, A.B. (Washington & Lee),	Sao Paulo, Brazil,	3601 Locust St.

Name.	Residence.	City Address.
Lane, Franklin Fayette, B.S. (Pennsylvania),	Philadelphia,	4740 Hazel Ave.
Leopold, Simon Stein,	do.	1428 N. Broad St.
Levering, James Walter, B.S. (Pennsylvania),	do.	2028 N. 15th St.
Logue, James Gibson,	Williamsport,	Dorm. 31 E. F. Smith.
Loughridge, Jonathan Edwards, A.B. (Williams),	Peoria, Ill.,	Dorm. 42 E. F. Smith.
McConnell, Edward Ford, A.B. (Central Univ. of Kentucky),	Danville, Ky.,	225 S. 37th St.
McCullough, Clarence Joseph,	Pittsburgh,	225 S. 37th St.
McNett, James Santee,	Hornell, N. Y.,	3609 Walnut St.
Maerker, Karl Roland, B.S. (Dartmouth),	Napoleon, Ohio,	3438 Walnut St.
Masonheimer, Willard Charles, A.B. (Lafayette),	Weatherly,	3703 Walnut St.
Mattson, William W.,	Seattle, Wash.,	Training House.
Millikin, Harry William, B.S. (Waynesburg),	Waynesburg,	Dorm. 435 Baird.
Milnor, Guy Champion, B.S. (Albright),	Warrensville,	Dorm. 31 E. F. Smith.
Nafey, Herbert William, B.S. (Rutgers),	New Brunswick, N. J.,	Dorm. 348 McKean.
Narrigan, Clifford Young,	Narberth,	118 N. 6th St.
Pacheco (y Chaverri), Oscar, B.S. and A. (Liceo de Heredia),	Heredia, Costa Rica,	3714 Locust St.
Passolano, Frank John,	New Kensington,	124 S. 34th St.
Peden, James Clark, B.S. (Davidson),	Fountain Inn, S. C.,	3703 Walnut St.
Robinson, Burnett,	Langley, Va.,	26 N. 38th St.
Rubin, Robert William,	Philadelphia,	2243 S. 9th St.
Schafer, Charles Solomon,	do.	2222 Ridge Ave.
Schumm, Herman Charles, B.S. (Pennsylvania),	Fort Hamilton, N. Y.,	Dorm. 335 Franklin.
Shields, George Patrick,	Oil City,	3703 Walnut St.
Silman, Charles Norman, B.S. (Bucknell),	St. Mary's,	Dorm. 47 Coxe.
Simons, Isaac Shirk, A.B. (Franklin & Marshall),	Marietta,	Dorm. 435 Baird.
Smith, Gibson, A.B. (Pennsylvania),	Philadelphia,	3639 Locust St.
South, John Joseph,	Bridgeport, Ohio,	Dorm. 37 Bodine.
Spangler, John Luther, B.S. (Pennsylvania),	York,	3733 Spruce St.
Sturgis, Samuel Booth,	Roxborough,	[488 Green Lane.]
Sullivan, Harry Gross,	Philadelphia,	4833 Hazel Ave.
Szlapka, Thaddeus Louis, B.S. (Pennsylvania),	Sheeder,	3733 Spruce St.
Taylor, James Swan, A.B. (Princeton),	Altoona,	Dorm. 34 Birthday.
Tebbetts, Herbert Edwin, B.S. (Earlham),	Richmond, Ind.,	Dorm. 314 Leidy.
Thompson, Hugh Alexander, A.B. (North Carolina),	Raleigh, N. C.,	3601 Locust St.
Underhill, Eugene, Jr., A.B. (Swarthmore),	Swarthmore,	[Swarthmore.]
Walker, Robert Carroll, B.S. (Davidson),	Waycross, Ga.,	3409 Walnut St.
Willson, Harry Leigh, B.S. (Whitman),	Idaho Falls, Idaho,	3601 Locust St.
Winkelman, Nathaniel,	Philadelphia,	6705 2d St. Pike.
Wood, Emlen, A.B. (Pennsylvania),	do.	3539 Locust St.

FIRST YEAR CLASS.

Name.	Residence.	City Address.
Aaronson, Maurice Arnold, Albaugh, Esten Forrest, B.S. (Ohio Northern), Alexander, Horace Edward, Allen, Bartholomew Manlove, Bates, William, Bodley, James Wiley, Bounds, John William, Brown, Kirk Charles, Buchanan, J. Arthur, Buzzard, Josiah Floyd, Callomon, Verner Bickart, Clemens, Edward Lamar, A.B. (Maryville), Damabrauckas, Adam, A.B. (Valparaiso), Dibble, John, Dike, Benjamin Harrison, Ernest, Richard Bilderback, Jr., Felton, William Scott, Fitzgerald, Charles Arnold, Glosser, Henry Clyde, A.B. (Dickinson), Goldsmith, Nathan Ralph, Goodwin, Andrew Jackson, Gore, Thomas Lee, Green, David Wright, Greene, Cyrus Theodore, A.B. (Lincoln), Hamilton, Arthur Beck, B.A. (Moravian), Hitcheock, Francis Bennett, B.S. (Pennsylvania), Hoge, Solomon F., A.B. (Waynesburg), Jalbuena, Ricardo, A.B. (Ateneo de Manila), Kelly, George Francis Joseph, Kistler, Robert Harrison, B.S. (Princeton), Klotz, Jeremiah Alexander, A.B. (Lafayette), Kuhlman, Ernest George, B.S. (Pittsburgh), Leopold, Jay Bashore, Little, Frederick Bryton, B.S. (Bucknell), Long, W. Newton, Luikart, Ralph Herbert, McCaw, William Walker, B.S. (Gettysburg), McCouch, Grayson Prevost, McDuffie, James Henry, Jr., A.B. (Davidson), McKee, Clarence Stiles, Marshall, John Edward, A.B. (Lebanon Valley), Mastin, Edward Vernon Metcalfe, Medrano, Joachim Higinius, B.S. and L. (Instituto de Oriente- Cuba), Miller, Richard Jonathan, B.S. (Gettysburg), Nichols, Eli, Packer, Jesse E.,	Philadelphia, Tarpon Springs, Fla., Murfreesboro, Tenn., Seaford, Del., Philadelphia, Stanton, Va., Plymouth, Seattle, Wash., Oxford, Stroudsburg, Pittsburgh, Caldwell, Idaho, Frankford, Camden, N. J., York, N. Y., Salem, N. J., Philadelphia, Clarion, Williamsport, Scranton, Wheeling, W. Va., Wilmington, N. C., Salem, N. J., Winton, N. C., Herrnhut, Saxony, Germany, Philadelphia, Waynesburg, Jaro, Iloilo, P. I., Philadelphia, Lansford, Northampton, Mt. Lebanon, Lebanon, Uniontown, York, Norfolk, Neb., McKeesport, Chestnut Hill, Columbus, Ga., Aurora, Neb., Annville, Mobile, Ala., Guantanamo, Cuba, Harrisburg, Wilmington, Del., Darby,	329 Dickinson St. Dorm. 429 Class of '87. 3729 Locust St. 25 S. Van Pelt St. 3745 Spruce St. 3603 Locust St. 3743 Spruce St. 3312 Walnut St. Dorm. 315 Leidy. 3405 Chestnut St. 2414 N. Broad St. [Wayne.] [4764 Cambridge St.] [559 Washington St.] 215 DeKalb Sq. 23 N. 54th St. 5305 Oxford Pike. 4437 Chestnut St. Dorm. 49 E. F. Smith. Dorm. 12 Birthday. 3649 Walnut St. 3815 Spruce St. Dorm. 393 N. Y. Alumni. 103 S. 34th St. 4223 Regent St. 4511 Locust St. 3719 Locust St. 3705 Woodland Ave. 1234 Montrose St. 3737 Spruce St. 3737 Spruce St. 218 S. 37th St. 206 S. 36th St. 217 DeKalb St. Dorm. 322 Leidy. 3601 Locust St. 3717 Locust St. [St. Martin's Lane.] 3731 Locust St. 3807 Spruce St. 3815 Spruce St. 3711 Walnut St. 3405 Chestnut St. 3717 Locust St. [1607 Mt. Salem Lane.] [444 S. 4th St.]

Name.	Residence.	City Address.
Patrick, Jesse Kersey, B.A. (Haverford),	West Chester, Philadelphia,	3413 Walnut St. 3112 N. Broad St.
Paul, John Davis, Peters, Theodore, B.S. (Hamilton),	Walden, N. Y.,	[831 DeKalb St., Norristown.]
Plum, Frank Arents, A.B. (Washington),	Seattle, Wash.,	3400 Walnut St.
Rawlings, Fred Bangs, B.S. (Emory),	Sandersville, Ga., Easton,	3318 Walnut St. 3236 Chestnut St.
Rice, Walter Douglas, Robbins, Elmer Ellsworth, Jr., A.B. (Harvard),	New Bedford, Mass., Pittsburgh, Newton, Mass.,	Dorm. 113 Foerderer. Dorm. 325 Franklin. 25 S. Van Pelt St.
Schlegel, Alvin Andrew, Secord, Walter Newton, Sharpe, Frank Alexander, B.S. (Davidson),	Greensboro, N. C., Dublin,	3731 Locust St. 647 S. Conestoga St.
Shearer, Herbert Benjamin, Smith, Stanton Reinhart, B.S. (Bucknell),	Stroudsburg, Philadelphia,	Dorm. 20 Morgan. 2403 E. York St.
Sommers, Raymond Lock, Staub, Samuel John, B.S. (Pacific),	do. Fort Wayne, Ind., Paterson, N. J.,	637 Jefferson St. 3614 Walnut St. [6410 Germantown Ave., Gtn.]
Van Sweringen, Budd Eakin, Van Winkle, John Shaw, Walsh, Richard Joseph, A.B. (St. Joseph),	Philadelphia. Mondovi, Wis., Philadelphia,	2320 S. Broad St. 203 S. 37th St. 3326 Walnut St.
Whelan, Paul, Wilson, Edwin Barrett, Withrow, Albert William, B.S. (Pennsylvania),	do.	728 Rising Sun Ave.
Woodard, George Sawyer, A.B. (Oberlin),	Battle Creek, Mich.,	257 S. 44th St.

SPECIAL STUDENTS.

Borden, William Benjamin, M.D. (Univ. of Maryland),	United States Army, Fort Bayard, N. M.,	1301 N. 12th St.
Butler, W. W. S., Jr., B.A., M.D. (Univ. of Virginia),	Roanoke, Va., Philadelphia,	Darby, Pa. 1541 S. Broad St.
Campbell, S., Delany, Lemuel T., M.D. (Leonard Medical College),	Raleigh, N. C. Cheyenne, Wyo.,	1326 Lombard St. 3621 Locust St.
Ellis, James William, Reeves, Alfred K., B.S. in E. (Pennsylvania),	Bridgeton, N. J.,	3707 Locust St.
Wallis, Wilson D., A.M. (Dickinson). B.S.C. (Oxford),	Sharon, Md.,	38 N. 36th St.

SPECIAL STUDENTS IN TROPICAL MEDICINE.

Ayer, Ira, M.D. (Long Island College Hosp.),	Brooklyn, N. Y.,	4125 Cambridge St.
Borden, John Thomas, M.D. (South Carolina),	Philadelphia,	1301 N. 12th St.
Edsall, Frank Hynard, M.D. (Pennsylvania),	Wilmington, Del.,	[903 Delaware Ave.]
Gibbens, Rev. H. C., M.D. (Medico-Chirurgical),	Philadelphia,	2839 N. 7th St.
Jackson, A. F., M.S. (Alabama Polytechnic Institute),	West Point, Ga.,	3703 Walnut St.
Smyth, Henry Field, M.D. (Pennsylvania),	Odessa, Del.,	[242 Harvey St., Gtn.]
Wright, Herbert L., M.D. (National Med. Univ.,) Chicago,	Hugo, Oklahoma,	3708 Walnut St.

COURSES IN PUBLIC HEALTH.

Name.	Residence.	City Address.
Ayer, Ira, M.D. (Long Island College Hosp.),	Brooklyn, N. Y.,	4125 Cambridge St.
Borden, John Thomas, M.D. (South Carolina),	Philadelphia,	1301 N. 12th St.
Edsall, Frank Hynard, M.D. (Pennsylvania),	Wilmington, Del.,	[903 Delaware Ave.]
Parke, Samuel Reynold, Jr., C.E. (Princeton),	Philadelphia,	1739 N. 17th St.
Smyth, Henry Field, M.D. (Pennsylvania),	Odessa, Del.,	[242 Harvey St., Gtn.]
Wright, Herbert L., M.D. (National Med. Univ., Chicago),	Hugo, Oklahoma,	3708 Walnut St.

SUMMARY.

Post-Graduate Students.....	7
Students of the Fourth-year Class.....	132
Students of the Third-year Class.....	98
Students of the Second-year Class.....	70
Students of the First-year Class.....	67
*Special Students.....	15
Total.....	389

* 7 in Tropical Medicine, 6 in Public Health and 4 special students (5 taking Tropical Medicine are also taking Public Health).

MEDICAL CALENDAR FOR 1912-1913.**1912.**

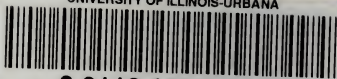
- June 20, Thursday.....*Registration of Candidates for Admission: 9 A. M.
- June 20, Thursday.....Entrance Examinations: 9 A. M.
- Sept. 19, Thursday.....*Registration of Candidates for Admission: 9 A. M. to 11 A. M.
- Sept. 19, Thursday.....Entrance Examinations begin: 9 A. M.
- Sept. 23, Monday.....Competitive Examinations for Medical Scholarships begin: 10 A. M.
- Sept. 23, Monday.....Examination for Admission to Advanced Standing begins: 2 P. M.
- Sept. 23, Monday.....Re-examinations begin: 2 P. M.
- Sept. 27, Friday.....Session begins: 8 P. M.
- Nov. 27, Wednesday.....Thanksgiving Recess begins: 6 P. M.
- Dec. 2, Monday.....Thanksgiving Recess ends: 9 A. M.
- Dec. 21, Saturday.....Christmas Recess begins: 6 P. M.

1913.

- Jan. 3, Friday.....Christmas Recess ends: 9 A. M.
- Jan. 27, Monday.....Mid-Year Examinations begin: 9 A. M.
- Feb. 22, Saturday.....University Day: Recess.
- Mar. 20, Thursday.....Easter Recess begins: 6 P. M.
- Mar. 25, Tuesday.....Easter Recess ends: 9 A. M.
- May 5, Monday.....Last day for receipt of Prize Essays and Reports.
- May 26, Monday.....Final Examinations, Fourth-Year Class, begin.
- June 2, Monday.....Final Examinations, other Classes, begin.
- June 18, Wednesday.....Commencement: 11 A. M.

*Registration of candidates for admission *by examination* only. Registration and Examination conducted in College Hall.

UNIVERSITY OF ILLINOIS-URBANA



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